March 7, 2019

Alicia Barraza
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7016

RE: Second Semi-Annual Groundwater Monitoring Event Report
Former Strauss Auto
535 4th Avenue
Brooklyn, New York
BCP Site No. C224189
Langan Project No.: 170264501

Dear Ms. Barraza:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this letter report to summarize the second semi-annual groundwater monitoring event at the Former Strauss Auto site located at 535 4th Avenue, Brooklyn, New York (New York State Brownfield Cleanup Site No. C224189). Groundwater monitoring was conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Site Management Plan (SMP), dated October 6, 2016. Previous groundwater monitoring results can be found in the following documents:

- NYSDEC-approved Final Engineering Report (FER), dated November 28, 2016 (first through third quarter)
- Fourth and Fifth Quarterly Groundwater Monitoring Events Report, dated June 22, 2017
- Sixth and Seventh Quarterly Groundwater Monitoring Events Report, dated November 30, 2017
- Eighth Quarterly and First Semi-Annual Groundwater Monitoring Events Report, dated June 19, 2018

In a letter dated January 11, 2018, the NYSDEC requested continuation of groundwater sampling of volatile organic compounds (VOC) on a semi-annual basis until indoor air sampling is performed following the installation of the sub-membrane depressurization system (SMDS) and basement slab.

Background

The site is a rectangular-shaped, about 18,200-square-foot (±0.418 acres) parcel located in the Park Slope neighborhood of Brooklyn, New York (Brooklyn Borough Tax Map Block 1041, Lot 1) and is bound by 14th Street to the north, multiple-story residential buildings to the east (204 14th Street and 155 15th Street), 15th Street to the south, and 4th Avenue to the west. A Site Location Map is presented as Figure 1.

Historical uses of the site include a church from at least 1888 to 1906 and an automobile repair facility from at least 1965 to 2012. The automobile repair facility was a Resource Conservation and Recovery Act (RCRA) generator of tetrachloroethylene (PCE) waste, and the site contained several underground storage tanks as well as various sumps, pits, and hydraulic lifts. A Brownfield Cleanup Agreement (BCA) was executed on June 10, 2014 and the site was remediated in accordance with an NYSDEC-approved Remedial Action Work Plan (RAWP). Documentation of the remediation, which included in-situ groundwater treatment to address residual chlorinated volatile organic compound (CVOC) impacts, is included in the FER. An NYSDEC-approved Environmental Easement referencing the SMP has been executed. The Certificate of Completion was issued on December 9, 2016. The second semi-annual groundwater monitoring event discussed herein is required to document the effectiveness of the remedy as specified by the SMP.

Groundwater Treatment

In-situ enhanced bioremediation (ISEB) in conjunction with in-situ chemical reduction (ISCR) was chosen as the remedy to treat residual CVOC-impacted groundwater. ISCR using enhanced zero valent iron (EZVI) was the primary remedy. To enhance its performance, an ISEB solution consisting of the bioaugmentation culture SDC-9™ and emulsified vegetable oil (EVO) was mixed with EZVI. Three targeted areas, varying by injection depths and substrate concentrations, were treated. The injection volumes were determined by the number of injection points and the injection interval. The EZVI and ISEB mixture was injected using a Geoprobe® direct-push drill rig. About 9,615 gallons of the mixture were injected between July 16 and August 5, 2015. Injection point locations and target treatment areas are documented in the FER and summarized in Figure 2.

Biotic and Abiotic Degradation Technologies

CVOCs, including PCE, are electron acceptors and their degradation via the biotic or abiotic pathway requires electron donors. Naturally occurring electron acceptors can compete with CVOCs for available electrons; therefore, an understanding of geochemical conditions is critical in understanding whether CVOC degradation can be interfered with by the competing electron acceptors. The most common electron acceptors in groundwater include oxygen, nitrate, iron

(III), and sulfate. In general, the abiotic degradation pathway (β-elimination) is mainly affected by the levels of dissolved oxygen and nitrate, but is not impacted by the levels of iron (III) and sulfate. In contrast, the biotic pathway (reductive dechlorination) is interfered with by all of the aforementioned electron acceptors. Effective reductive dechlorination via the biotic pathway generally occurs when all natural electron acceptors are either at naturally low levels or eliminated; focusing electron donor demands from carbon substrate (i.e., emulsified vegetable oil) and EZVI by eliminating competing naturally occurring electron acceptors.

EZVI can achieve reduction and maintain longevity of reactivity by enhancing two reduction pathways: biotic as reductive dechlorination and abiotic as β-elimination.

Reductive Dechlorination (Biotic)

The chlorinated solvent biodegradation pathway is reductive dechlorination, which involves the microbial degradation of PCE to its daughter products trichloroethylene (TCE), cis-1,2-dichloroethylene, and then to vinyl chloride. The end products of reductive dechlorination are the innocuous compounds, ethene and ethane. The common limiting factors for reductive dechlorination are the availability of organic substrates (electron donors) and the microbial strain dehalococcoides (DHC), which are the only microbial strains capable of complete dechlorination to ethene and ethane.

β-elimination (Abiotic)

β-elimination is the abiotic pathway through which CVOCs are degraded to acetylene instead of ethene or ethane. Daughter products that can be more toxic than the parent compounds, such as vinyl chloride, would not be generated via the abiotic pathway. In general, abiotic degradation is mainly enhanced by ZVI, and is faster and more effective than reductive dechlorination.

Groundwater Sampling

Five performance monitoring wells (MW12 through MW16) were installed to monitor groundwater conditions following injections. Details of the well installation and development are included in the FER. In addition, two off-site wells (MW05 and MW07) installed during the remedial investigation (RI) were also used to evaluate up-gradient groundwater conditions and monitor the performance of the in-situ groundwater remedy. A Monitoring Well Location Map is included as Figure 3.

Groundwater monitoring to assess CVOC concentrations in groundwater will continue, as determined by the NYSDEC in consultation with New York State Department of Health (NYSDOH), until residual groundwater concentrations are below the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) for Class

GA water or are asymptotic at an acceptable level over an extended period. As stated by NYSDEC in a letter dated January 11, 2018, groundwater monitoring for VOCs will continue on a semi-annual basis until a soil vapor intrusion (SVI) evaluation is conducted.

Table 1 presents the analytical results of pre-injection groundwater sampling performed on- and off-site. The three initial post-injection groundwater monitoring events were conducted in November 2015 (quarterly monitoring event Q1), February 2016 (Q2), and May 2016 (Q3) and were summarized in the FER. Quarterly monitoring events conducted in September 2016 (Q4) and December 2016 (Q5) were summarized in the Fourth and Fifth Quarterly Groundwater Monitoring Events Report, quarterly monitoring conducted in March 2017 (Q6) and July 2017 (Q7) were summarized in the Sixth and Seventh Quarterly Groundwater Monitoring Events Report and quarterly monitoring conducted in October 2017 (Q8) and April 2018 (SA1) were summarized in the Eighth Quarterly Monitoring and First Semi-Annual Groundwater Monitoring Events Report. This groundwater monitoring report presents the findings from the second semi-annual post-injection groundwater monitoring event (October 2018 SA2).

Second Semi-Annual Groundwater Monitoring Event – October 2018

Groundwater monitoring wells MW05, MW07, and MW12 through MW16 were gauged and sampled on October 25, 2018. Prior to sampling, Langan visually inspected the groundwater monitoring wells to confirm there was no evidence of tampering or damage, recorded an initial headspace VOC reading (recorded in parts per million [ppm]), and measured the depth to groundwater at each monitoring well using a Solinst oil/water interface probe. Consistent with previous monitoring events, the monitoring wells were free of non-aqueous phase liquid (NAPL).

Prior to collecting groundwater samples, each well was purged using a down-hole Monsoon® pump and dedicated, disposable polyethylene tubing. During purging, the turbidity, pH, temperature, conductivity, oxidation-reduction potential (ORP), and dissolved oxygen were monitored using a Horiba U-52 water quality meter with a flow-through cell. Groundwater was purged until water quality parameters were stable and the turbidity was below 50 Nephelometric turbidity units (MW16) or the well was dry (MW05, MW07, MW12, MW13, MW14, and MW15). Measurements were recorded on Langan field sampling forms, which are included in Attachment A.

A table summarizing the initial headspace reading and the initial groundwater elevation measurement at each well is summarized below.

Well Number	Second Semi-Annual Groundwater Monitoring Event – October 2018	
	Headspace Reading (ppm)	Initial Water Elevation (feet [NAVD88])
MW05	0.1	22.57
MW07	0.2	28.35
MW12	0.3	23.96
MW13	0.6	18.80
MW14	0.1	18.64
MW15	0.2	23.57
MW16	0.1	21.01

[1] NAVD88 = North American Vertical Datum of 1988

After purging was complete and the groundwater level had returned to its pre-purge level at wells MW05, MW07, MW12, MW13, MW14, and MW15, a groundwater sample was collected using a dedicated disposable polyethylene bailer. Monitoring well MW16 was sampled with the submersible pump and dedicated tubing immediately following purging. Groundwater samples were collected into laboratory-prepared containers, tightly sealed, uniquely labeled, stored on ice for transport under standard chain-of-custody procedures and analyzed by York Analytical Laboratories (York) in Stratford, Connecticut. One trip blank, one field blank, one duplicate sample, and a matrix spike/matrix spike duplicate set were included for quality assurance/quality control (QA/QC) purposes. The trip blank was analyzed for Target Compound List (TCL) VOCs. The field blank and the groundwater samples (including the duplicate sample) were analyzed for TCL VOCs, total and dissolved iron, and sulfate.

Quality Assurance/Quality Control

The duplicate sample results are presented in Tables 2 and 3 alongside the parent sample. Analytical results for the field and trip blank samples are summarized in Table 4.

A field blank sample was collected to determine the effectiveness of the laboratory decontamination procedures for laboratory-supplied bottleware and to identify the presence of any ambient contamination at the field site. The field blank was collected by pouring deionized water provided by the laboratory directly into sample bottleware.

A coded field duplicate was collected to evaluate the precision of the analytical methods and uniformity of the sample matrix. The duplicate was collected from the same material as the primary sample by splitting the volume of sample collected in the field into two sample containers. The sample is termed "coded" because it was labeled in such a manner that the laboratory would not be able to determine the parent sample associated with the duplicate

sample. This coding serves to eliminate possible bias that could arise during lab analysis. The field duplicate was analyzed for the same parameters as the parent sample.

A trip blank sample was collected to assess the potential for contamination of the sample containers and samples during the trip from the laboratory, to the field, and back to the laboratory for analysis. Trip blanks contain about 40 milliliters of acidic water (doped with hydrochloric acid) in vials sealed by the laboratory when the empty sample containers are shipped to the field, and are unsealed and analyzed by the laboratory when a sample shipment is received from the field.

The field duplicate results (sample DUP01_102518) closely matched the results from their parent sample (sample MW16_102518), thereby demonstrating the accuracy of the analytical methods. The field and trip blank results indicated no substantial cross-contamination issues arising from ambient conditions during sampling and during sample transport, respectively. Matrix spike/matrix spike duplicate recoveries were evaluated as part of the third-party data validation.

Validation Overview

Third-party data validation was performed in accordance with United States Environmental Protection Agency (USEPA) Region II Standard Operating Procedure (SOP) #HW-34, "Trace Volatile Data Validation" (February 19, 2013, Revision 3). Validation includes reconstruction of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. The data was found to be valid and usable for its intended application. A Data Usability Summary Report (DUSR) is included in Attachment B.

Groundwater Monitoring Analytical Results

<u>VOCs</u>

Laboratory analytical data was compared to the NYSDEC TOGS 1.1.1 AWQS for Class GA water. CVOCs detected above the AWQS in samples collected during this semi-annual monitoring event include cis-1,2-DCE, PCE, TCE, and vinyl chloride. Analytical detections for pre- and post-remediation conditions are presented in Tables 1 and 2, respectively. The laboratory analytical reports are included as Attachment C. A summary of VOC compounds exceeding the AWQS criteria and the detected concentrations (shown in parentheses) is presented below:

Second Semi-Annual Groundwater Sampling Event

- MW05
  - PCE (7.29 micrograms per liter [µg/L])
- MW07
  - PCE (23.3 µg/L)
- MW12
  - No concentrations exceeding criteria
- MW13
  - Vinyl Chloride (7.55 µg/L)
- MW14
  - cis-1,2-Dichloroethylene ([cis-1,2-DCE] 43.1 µg/L)
  - PCE (53.3 µg/L)
  - TCE (11.4 µg/L)
- MW15
  - PCE (8.29 µg/L)
- MW16/MW16 Duplicate
  - cis-1,2-DCE (14.8/14.6 µg/L)
  - PCE (7.96/7.81µg/L)
  - Vinyl Chloride (3.56/3.52 µg/L)

CVOC results from the second semi-annual monitoring event are presented on Figure 3.

PCE, the target parent compound, was detected above the AWQS in samples collected during one or more quarterly and semi-annual monitoring events at each of the seven wells. The first quarterly monitoring event occurred six months following the in-situ injection in August 2015. Figure 4 summarizes PCE concentrations detected in groundwater prior to remediation and during each performance monitoring event. In relation to pre-remediation concentrations, concentrations of PCE decreased by up to three orders of magnitude at the source area (MW12) up to two orders of magnitude at the transitional area (MW13), and up to one order of magnitude at the plume perimeter area (MW14, MW15, and MW16). By the second semi-annual groundwater sampling event (i.e., 38 months after groundwater remedy was implemented), PCE was reduced to below the AWQS within the former source area (MW12). The PCE concentrations in the transitional area (MW13) were also reduced to below the AWQS by the third quarterly event and continue to remain below the AWQS as of October 2018. PCE reductions were detected at MW16, a plume perimeter well, during each of the ten monitoring events, with the lowest PCE concentration being detected during this semi-annual monitoring event. Notable PCE reductions were not detected at the off-site, up-gradient wells (MW5 and MW7).

TCE was most likely produced through biodegradation of PCE at this site and has been detected above the AWQS in only one well (MW14) since the third monitoring event in May 2016, which was nine months after the groundwater remedy was implemented.

The CVOC cis-1,2-DCE, a daughter product of PCE and TCE biodegradation, was detected above the AWQS in samples collected during one or more quarterly monitoring and semi-annual events at wells MW12, MW13, MW14, and MW16. As biodegradation of PCE and TCE occurs, the concentration of cis-1,2-DCE is expected to increase while PCE and TCE concentrations decrease. When the parent compounds are eliminated, the concentration of cis-1,2-DCE is expected to decrease. If PCE is degraded via an abiotic pathway, the daughter product cis-1,2-DCE will not be produced. During the first seven monitoring events, the concentration of cis-1,2-DCE in MW12 (source area), MW13 (transitional area), and MW16 (plume perimeter) demonstrated the typical trend influenced by biodegradation. Following the third quarterly sampling event, the concentration of cis-1,2-DCE had decreased at MW12 below the AWQS of 5 µg/L. During the eighth quarterly and first and second semi-annual sampling events, the concentration of cis-1,2-DCE had decreased at MW13 below the AWQS of 5 µg/L, and it was only detected above the AWQS at perimeter wells MW14 and MW16 during the October 2018 second semi-annual sampling event. Concentrations of cis-1,2-DCE increased slightly in perimeter monitoring wells MW14 and MW16 from a concentration of 38.9 µg/L, and 7.8 µg/L, respectively, during the first semi-annual monitoring event in April 2018 to 43.1 µg/L and 14.8 µg/L, respectively, during the second semi-annual monitoring event in October 2018.

Vinyl chloride is the last CVOC produced via PCE biodegradation. Vinyl chloride was detected above the AWQS in samples collected during one or more quarterly or semi-annual monitoring events at wells MW12, MW13 and MW16. Similar to the trend of cis-1,2-DCE concentrations, as PCE and TCE biodegrade, the vinyl chloride concentration is expected to increase as the cis-1,2-DCE concentration is reduced via biodegradation before eventually decreasing. The impact of biodegradation was more significant in MW13 than MW12. By the second semi-annual sampling event in October 2018, vinyl chloride was only detected above the AWQS in MW13 (7.55 µg/L) and MW16 (3.56 µg/L).

Compared with the pre-remediation concentrations, total CVOCs generally decreased significantly at the source area (97% reduction) and transitional area (95% reduction). Continuous reductions of CVOCs occurred after the in-situ injection. Between the first quarterly and second semi-annual monitoring events, the total concentration of CVOCs decreased at MW12, MW13, MW14, and MW16 (from 202.25 to 7.62 µg/L, 308.6 to 16.23 µg/L, 128.47 to 108.11 µg/L, and 113.5 to 28.6 µg/L, respectively) and remained largely unchanged at MW15 from 5.9 to 8.29 µg/L. The concentration of total CVOCs detected at off-site well MW05 prior to the injections ranged from 38.76 to 46.8 µg/L, and decreased to 7.3 µg/L by the second semi-annual monitoring event. CVOCs were detected in off-site well MW07 at a concentration of 11.51 µg/L prior to the injections, and by the second semi-annual monitoring event the concentration increased to 23.79 µg/L.

The only other VOCs that exceeded the AWQS were methyl ethyl ketone through the 6th quarterly monitoring event, 1,2-dichloroethane during the 1st semi-annual monitoring event, and acetone through the 8th quarterly monitoring event. Methyl ethyl ketone (2-butanone) was not detected above the AWQS in any of the samples collected during the second semi-annual monitoring event. Methyl ethyl ketone was detected at a maximum concentration of 240 µg/L at MW12 during the first quarterly monitoring event, but concentrations have shown an overall reduction to non-detect during the second semi-annual monitoring event. The CVOC 1,2-dichloroethane is a colorless liquid typically associated with the production of vinyl chloride and is not associated with the degradation of PCE. During the first semi-annual sampling event, 1,2-dichloroethane was detected above the AWQS of 0.6 µg/L in MW14 (0.7 µg/L). During the second semi-annual sampling event, 1,2-dichloroethane was not detected in any groundwater samples collected. Acetone is a degradation by-product of naturally-occurring organic or injected organic substrate (EVO). The detection of acetone is strong evidence for organic substrate distribution and biodegradation occurrence. Acetone is readily consumed by the microbes and will not accumulate in the subsurface. Acetone contributed to the total VOC concentrations in MW12, MW13, and MW16 during the first three monitoring events. Because acetone concentrations decreased significantly by the second semi-annual monitoring event, the total VOC concentration also decreased significantly at MW12, MW13, and MW16 (from 21,443.5 to 10.83 µg/L, 549.06 to 20.95 µg/L, and 118.4 to 28.62 µg/L, respectively). The total VOC concentration did not change substantially at MW15 (from 5.99 to 8.85 µg/L). Total VOC concentrations reduced in off-site monitoring well MW05 (from 49.93 to 7.56 µg/L), and the total VOC concentration did not change substantially at off-site monitoring well MW07 (from 17.11 to 24.06 µg/L).

Summary of Contaminant Concentration Trends

The contaminant concentration trends of monitoring wells in each area vary based upon the well locations.

- Source Area: Monitoring well MW12 is representative of the source area. Well MW08, which was an abandoned well located near the source area, exhibited PCE concentrations of more than 2,000 µg/L prior to the injection. At MW12 (the nearest replacement well), PCE was reduced to concentrations at or below the detection limit within six months after the injection while the daughter products (cis-1,2-dichloroethylene and vinyl chloride) were initially observed but have been reduced to concentrations below the AWQS. Acetone, another compound detected above the AWQS, is a fermentation/biodegradation product of the EVO and was rapidly consumed by the indigenous subsurface microbes. Elevated acetone concentrations detected in November 2015 during the first performance monitoring event have consistently decreased during the following nine monitoring events to concentrations below the AWQS.

- Transitional Area: Monitoring well MW13 is representative of the transitional area. Well MW03, which was abandoned during building construction, exhibited a PCE concentration of 270 µg/L and a total CVOC concentration of 290 µg/L prior to injection. At MW13 (the nearest replacement well), the parent compounds PCE and TCE have generally degraded to concentrations below the AWQS since the third quarterly monitoring event. The PCE and TCE daughter products cis-1,2-dichloroethylene and vinyl chloride remained generally consistent to concentrations prior to treatment over the quarterly sampling events, although by the eighth quarterly monitoring event cis-1,2-DCE was detected below the AWQS. Vinyl chloride was detected below the AWQS during the eighth quarterly monitoring event, but was detected slightly above the AWQS during the first and second semi-annual sampling events. Acetone concentrations peaked during the second monitoring event in February 2016 and decreased during the following seven events to concentrations below the AWQS.
- Plume Perimeter Area: Monitoring wells MW14, MW15, and MW16 are representative of the plume perimeter area. Well MW02, which was abandoned during building construction, exhibited a PCE concentration of 160 µg/L before the injection. Replacement wells MW14 and MW16 showed reductions of PCE (to 53.3 and 7.96 µg/L, respectively, or roughly 67-95%) by the second semi-annual monitoring event. Compared to the first quarterly monitoring event, the concentration of cis-1,2-dichloroethylene in MW14 increased in the second through fifth quarterly monitoring events and generally remained consistent in the sixth quarterly through second semi-annual monitoring events. Concentrations of cis-1,2-dichloroethylene and acetone at MW16 were greatest during the second quarterly monitoring event and generally decreased over the following eight monitoring events. The concentration of vinyl chloride increased to above the AWQS in MW16 during the most recent sampling event in October 2018.
- Upgradient (Off-site) Area: Monitoring wells MW05 and MW07 are representative of upgradient conditions. Concentrations of PCE, VOCs, and CVOCs have decreased over the last seven monitoring events in monitoring well MW05. Concentrations of PCE, VOCs, and CVOCs remained generally unchanged in monitoring well MW07. Acetone was detected in the sample collected from MW07 during the fourth quarterly monitoring event; however, the concentration was below the AWQS.

Geochemical Conditions

Geochemical parameters, including pH, ORP, and dissolved oxygen (DO), were field documented at each monitoring well during purging (Attachment A). Additional geochemical parameters including sulfate and total/ dissolved iron were analyzed by the laboratory. The analytical laboratory reports from the second semi-annual monitoring event are included in Attachment C.

The geochemical parameters and analytical results are summarized in Table 3. The results and conclusions of the geochemical analyses are summarized as follows:

- DO and ORP indicate that the subsurface conditions changed from aerobic-oxidative prior to implementation of the groundwater remedy to anaerobic-reductive conditions at the source area and the transitional areas. Aerobic-oxidative conditions along the plume perimeter have not changed significantly since implementation of the remedy, with the exception of at MW16, where conditions have consistently been reductive since the 2nd quarterly groundwater monitoring event and anaerobic since the 8th quarterly groundwater monitoring event.
- Testing for sulfate was performed to identify potential competition with the CVOC biodegradation pathway. Sulfate was detected in all monitoring wells during the second semi-annual monitoring event, suggesting potential interference by these electron acceptors.
- The concentration of dissolved iron can be used as an indicator of treatment efficacy (i.e., an increase in dissolved iron indicates effective EZVI treatment). Before injection, the maximum concentrations of total and dissolved iron were 29.3 milligrams per liter (mg/L) at MW08 and 0.14 mg/L at MW11, respectively. EZVI increased iron levels both on-site and off-site following treatment, with the greatest total and dissolved iron concentrations detected at MW12 (76.9 mg/L and 32.5 mg/L, respectively). Concentrations of both total and dissolved iron peaked at the second and third sampling events, respectively. MW12 showed a significant increase in concentrations of both total and dissolved iron (64.4 mg/L and 24.4 mg/L, respectively) during the most recent sampling event. MW13 showed a trend of decreasing total and dissolved iron concentrations, with concentrations of each peaking in the fifth quarterly monitoring event. Other on-site and off-site wells also showed increases of total and dissolved iron, suggesting a distribution of EZVI across the site.

Findings

Significant contaminant reduction has been achieved at the site, with the greatest reduction detected at the source area, where the ZVI dosage was 10 grams of iron per liter of pore water (g/L), while fewer reductions were detected at the plume perimeter, where ZVI dosage was 2.5 g/L. Based on an evaluation of the VOC concentrations and geochemical and biological parameters, the ZVI dosage appears to have contributed significantly to the degradation pathways and efficiency.

- The degradation at the source area was mainly via β-elimination pathway, because daughter products were not produced and moderate levels of DHC were also detected. β-elimination, being the abiotic degradation pathway mediated by ZVI, is believed to be a

more rapid and efficient degradation pathway than biodegradation. The most reducing conditions were also observed at the source area. Meanwhile, sulfate and nitrate were depleted and iron concentration spiked at the source area, indicating the β-elimination pathway was effectively enhanced at the source area.

- At the transitional area, CVOCs were reduced to about 16 µg/L (about 95% reduction since 1st quarterly monitoring event) mainly via bio-mediated pathways that produced vinyl chloride as a daughter product. The overall decrease in sulfate concentrations and increase in dissolved iron concentrations were observed when CVOCs were reduced by the fifth quarterly monitoring event, indicating reductive dechlorination was the main degradation pathway in this area.
- At the plume perimeter area, a moderate reduction of PCE concentration and production of cis-1,2-DCE was detected, with the exception of MW14 which has not changed significantly since the first quarterly monitoring event. Increases in dissolved iron concentrations and decreases in sulfate concentrations were measured. It is anticipated that as the geochemical parameters are converted to more favorable conditions for reductive dechlorination, CVOC degradation will be initiated.

Based on the contaminant trends and geochemical conditions, continued reductions of contaminants are anticipated. The reduction of CVOCs via biotic and abiotic pathways could continue to remove contaminant mass and control contaminant migration. Per discussions with NYSDEC, semi-annual groundwater monitoring for VOCs will continue in accordance with the SMP until completion of an SVI evaluation. During subsequent groundwater monitoring events, Langan recommends that sampling be limited to PCE and its degradation products (PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, and vinyl chloride). Subsequent groundwater monitoring events will be reported to NYSDEC and summarized in the next semi-annual groundwater monitoring report.

Sincerely,

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C

Michael D. Burke, PG, CHMM
Principal/Vice President

Enclosure(s):

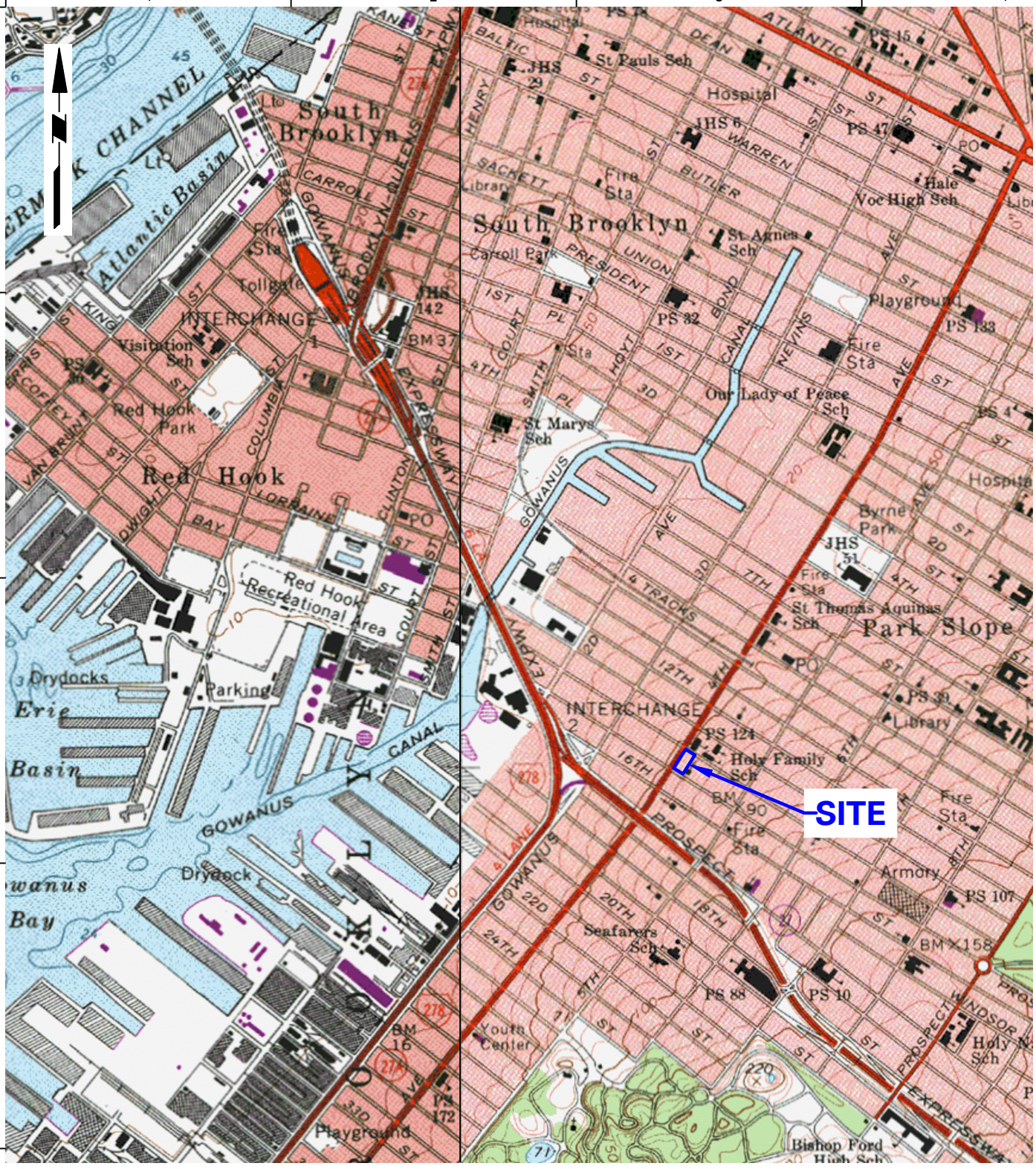
Figure 1	Site Location Map
Figure 2	Injection Point Locations and Volumes
Figure 3	Monitoring Well Locations and Results
Figure 4	Baseline and Performance Monitoring PCE Concentrations

Table 1	Groundwater Sample Detection Summary – Remedial Investigation Report
Table 2	Second Semi-Annual Groundwater Monitoring Results (VOCs)
Table 3	Second Semi-Annual Groundwater Monitoring Results (Geochemical and Biological Parameters)
Table 4	Second Semi-Annual Groundwater Monitoring Results – QA/QC Samples (VOCs and Geochemical Parameters)

Attachment A	Groundwater Sampling Forms
Attachment B	Data Usability Report
Attachment C	Laboratory Analytical Reports, Chain-of-Custody, and Certification

cc: Partners VII/535 Fourth Owner LLC

FIGURES



SOURCE: USGS 7.5-MINUTE BROOKLYN AND JERSEY CITY TOPOGRAPHIC QUADRANGLE MAPS, DATED 1967, REVISED 1979

LANGAN

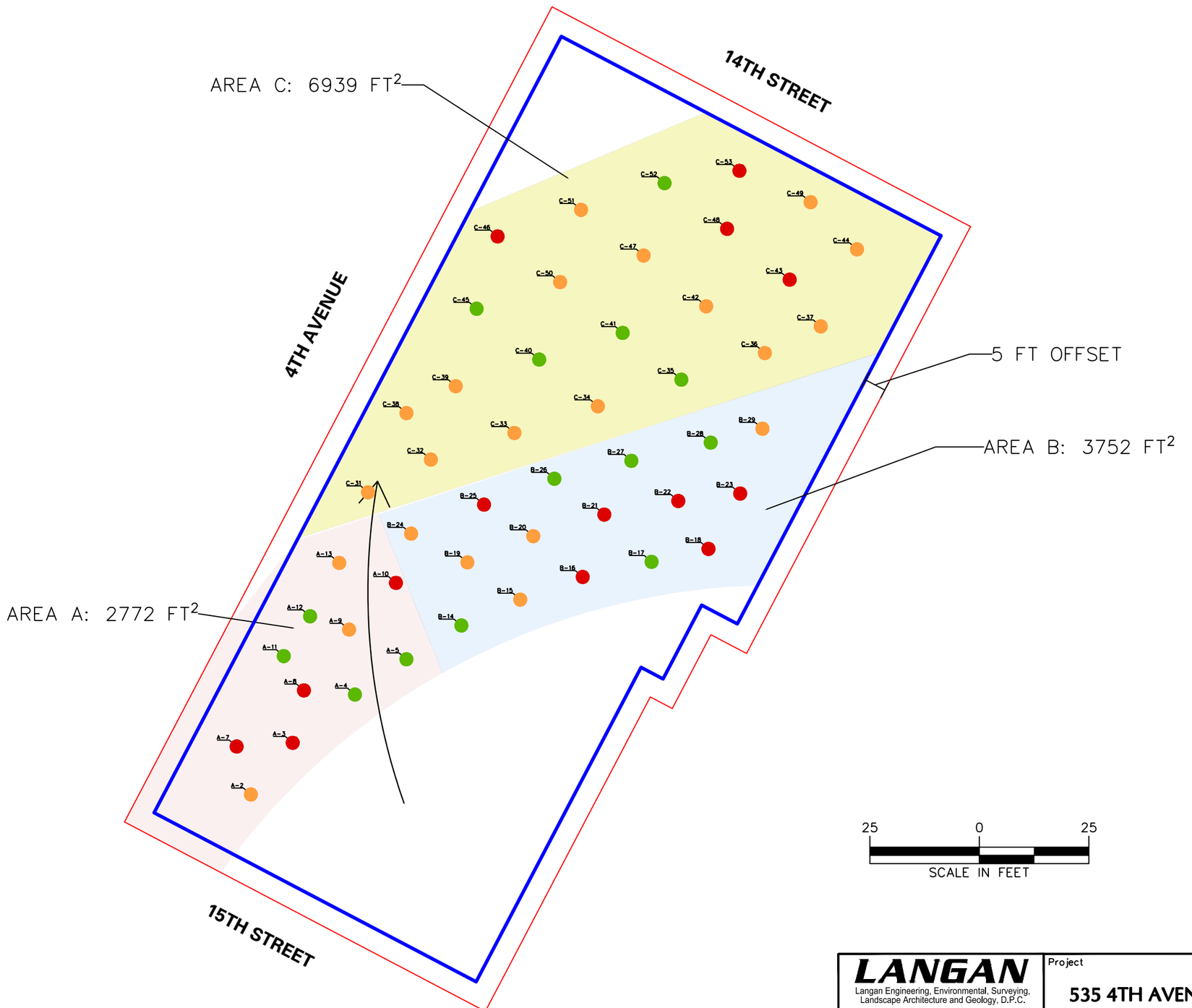
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Project	535 4TH AVENUE BLOCK No. 1041, LOT No. 1 BROOKLYN KINGS NEW YORK
Figure Title	SITE LOCATION MAP
Project No.	170264501
Date	2/28/2019
Drawn By	JED
Checked By	ELS
Figure No.	1
Sheet	1 of 4

Filename: \\langan.com\data\NY\data5\170264501\Cadd Data - 170264501\2D-DesignFiles\Environmental\FER\Figure 1 - Site Location Map.dwg Date: 2/28/2019 Time: 16:18 User: jdonelan Style Table: Langan.stb Layout: Site Location Map



LEGEND:

- SITE BOUNDARY
- AREA A: TREATMENT AREA WITH 3 FT SAND OVER DENSE CLAY LAYER. GROUNDWATER FLOW VELOCITY IS APPROXIMATELY 2.7 FT PER DAY.
- AREA B: TREATMENT AREA WITH 5 FT SAND OVER DENSE CLAY LAYER. GROUNDWATER FLOW VELOCITY IS APPROXIMATELY 1.7 FT PER DAY.
- AREA C: TREATMENT AREA WITH 10 FT SAND OVER DENSE CLAY LAYER. GROUNDWATER FLOW VELOCITY IS APPROXIMATELY 0.2 FT PER DAY.
- GROUNDWATER FLOW DIRECTION
- DPT (HIGH) INJECTION POINT LOCATION
- DPT (TARGET) INJECTION POINT LOCATION
- DPT (LOW) INJECTION POINT LOCATION

25 0 25

SCALE IN FEET

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Project
535 4TH AVENUE
BLOCK No. 1041, LOT No. 1
BROOKLYN
KINGS NEW YORK

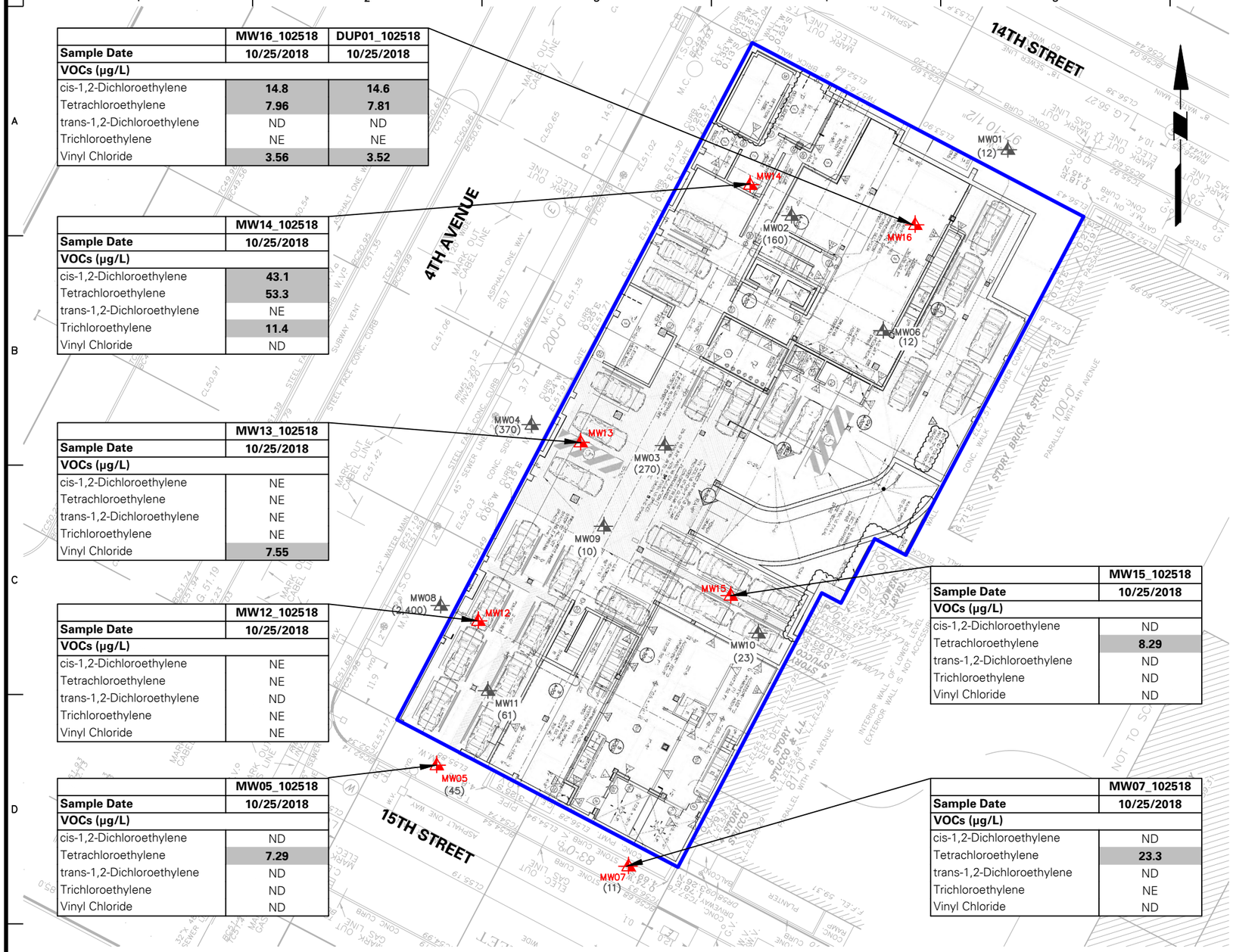
Figure Title
INJECTION POINT LOCATIONS AND VOLUMES

Project No. 170264501
Date 12/06/2018
Drawn By JED
Checked By ELS

Figure No. 2

Sheet 2 of 4

Filename: \\langan.com\data\NY\data5\170264501\Cadd Data - 170264501\2D-DesignFiles\Environmental\FER\Figure 2 - Injection Point Locations and Volumes.dwg Date: 2/28/2019 Time: 16:19 User: jdonelan Style Table: Langan.stb Layout: Sample Location Map



	MW16_102518	DUP01_102518
Sample Date	**10/25/2018**	**10/25/2018**
VOCs (µg/L)		
cis-1,2-Dichloroethylene	**14.8**	**14.6**
Tetrachloroethylene	**7.96**	**7.81**
trans-1,2-Dichloroethylene	ND	ND
Trichloroethylene	NE	NE
Vinyl Chloride	**3.56**	**3.52**

	MW14_102518
Sample Date	**10/25/2018**
VOCs (µg/L)	
cis-1,2-Dichloroethylene	**43.1**
Tetrachloroethylene	**53.3**
trans-1,2-Dichloroethylene	NE
Trichloroethylene	**11.4**
Vinyl Chloride	ND

	MW13_102518
Sample Date	**10/25/2018**
VOCs (µg/L)	
cis-1,2-Dichloroethylene	NE
Tetrachloroethylene	NE
trans-1,2-Dichloroethylene	NE
Trichloroethylene	NE
Vinyl Chloride	**7.55**

	MW12_102518
Sample Date	**10/25/2018**
VOCs (µg/L)	
cis-1,2-Dichloroethylene	NE
Tetrachloroethylene	NE
trans-1,2-Dichloroethylene	ND
Trichloroethylene	NE
Vinyl Chloride	NE

	MW05_102518
Sample Date	**10/25/2018**
VOCs (µg/L)	
cis-1,2-Dichloroethylene	ND
Tetrachloroethylene	**7.29**
trans-1,2-Dichloroethylene	ND
Trichloroethylene	ND
Vinyl Chloride	ND

	MW15_102518
Sample Date	**10/25/2018**
VOCs (µg/L)	
cis-1,2-Dichloroethylene	ND
Tetrachloroethylene	**8.29**
trans-1,2-Dichloroethylene	ND
Trichloroethylene	ND
Vinyl Chloride	ND

	MW07_102518
Sample Date	**10/25/2018**
VOCs (µg/L)	
cis-1,2-Dichloroethylene	ND
Tetrachloroethylene	**23.3**
trans-1,2-Dichloroethylene	ND
Trichloroethylene	NE
Vinyl Chloride	ND

LEGEND:

SITE BOUNDARY

MW01 — REMEDIAL INVESTIGATION MONITORING WELL LOCATION (LANGAN, JANUARY AND FEBRUARY 2014)

(12) — PRE-TREATMENT CONCENTRATION OF TETRACHLOROETHYLENE (PCE) IN REMEDIAL INVESTIGATION (MARCH 2015) AND CORRESPONDING ADDITIONAL INVESTIGATION (FEBRUARY 2015) MONITORING WELLS IN µg/L

MW12 — POST-INJECTION PERFORMANCE MONITORING WELL LOCATION (LANGAN, SEPTEMBER 2015)

NOTES:

1. BASE MAP IS TAKEN FROM TOPOGRAPHICAL SURVEY, PREPARED BY ROGUSKI LAND SURVEYING, P.C., DATED SEPTEMBER 29, 2014, AND FOUNDATION/CELLAR FRAMING PLAN PREPARED BY AUFGANG ARCHITECTS, DATED AUGUST 1, 2014.
2. MONITORING WELL LOCATIONS WERE SURVEYED BY LANGAN ON FEBRUARY 24 AND OCTOBER 29, 2014, JANUARY 30, 2015, AND NOVEMBER 25, 2015
3. OFF-SITE WELLS MW05 AND MW07 WERE INSTALLED DURING THE REMEDIAL INVESTIGATION (RI) TO BE USED AS POST-INJECTION PERFORMANCE MONITORING WELLS. ALL OTHER RI MONITORING WELLS WERE EITHER DECOMMISSIONED VIA THE APPLICATION OF GROUT, OR DESTROYED DURING SITE DEMOLITION.
4. POST-INJECTION PERFORMANCE MONITORING WELLS WERE INSTALLED UNDER LANGAN OVERSIGHT IN SEPTEMBER 2015.
5. GROUNDWATER SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT WATER QUALITY STANDARDS (AWQS) AND GUIDANCE VALUES FOR CLASS GA - DRINKING WATER.
6. ONLY CHLORINATED VOLATILE ORGANIC COMPOUNDS (CVOC) ARE SHOWN.
7. CONCENTRATIONS EXCEEDING THE NYSDEC REGULATORY CRITERIA ARE HIGHLIGHTED AND IN BOLD.
8. NE = CONCENTRATION DID NOT EXCEED THE NYSDEC REGULATORY CRITERIA
9. ND = NOT DETECTED
10. µg/L = MICROGRAM PER LITER

NYSDEC TOGS AWQS	
VOCs (µg/L)	
cis-1,2-Dichloroethylene	5
Tetrachloroethylene	5
trans-1,2-Dichloroethylene	5
Trichloroethylene	5
Vinyl Chloride	2

30 0 15 30
SCALE IN FEET

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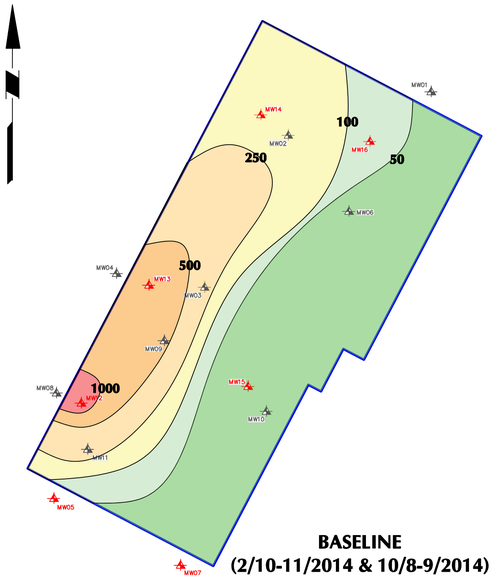
Project: 535 4TH AVENUE
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BROOKLYN
KINGS NEW YORK

Figure Title: PERFORMANCE MONITORING WELL LOCATIONS AND RESULTS - SECOND SEMI ANNUAL

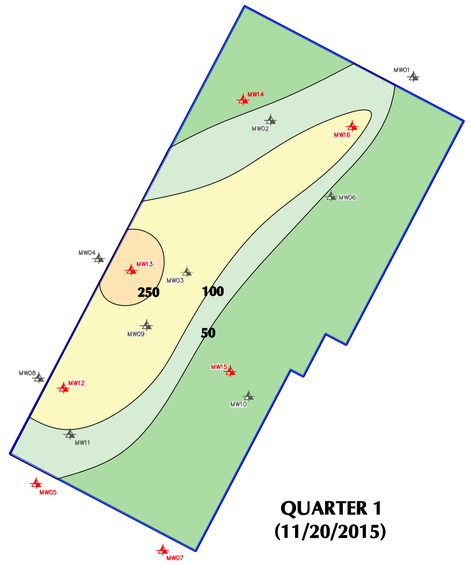
Project No. 170264501
Date 12/06/2018
Drawn By JED
Checked By ELS

Figure No. 3

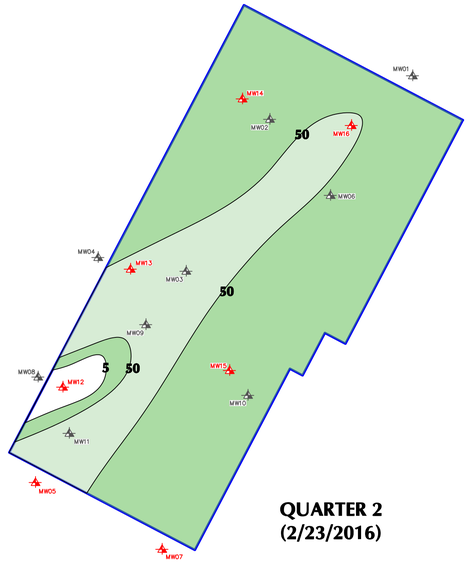
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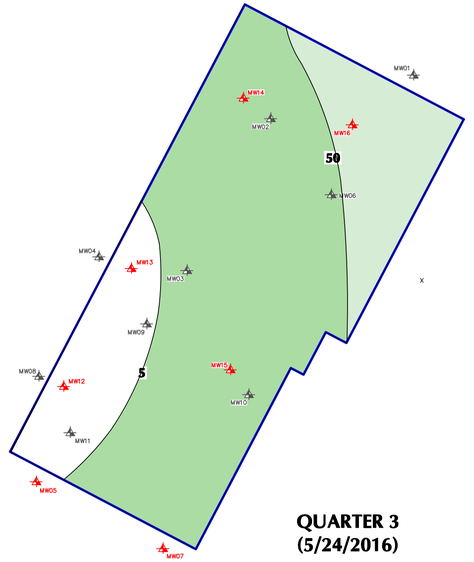
BASELINE
(2/10-11/2014 & 10/8-9/2014)



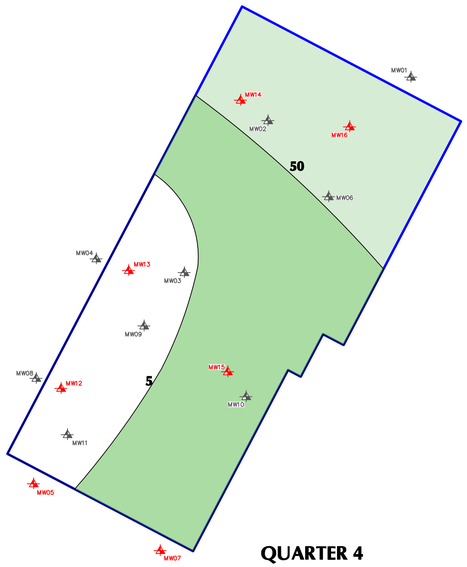
QUARTER 1
(11/20/2015)



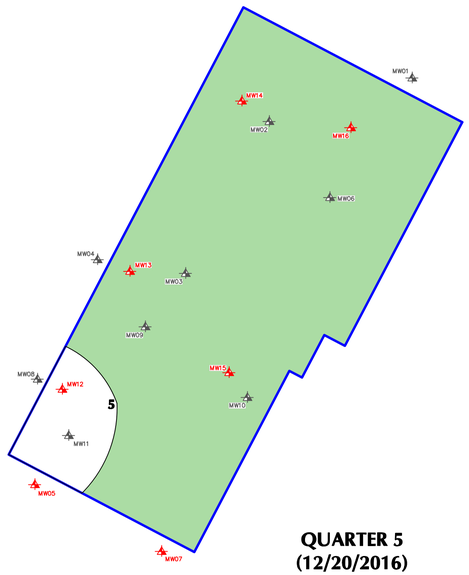
QUARTER 2
(2/23/2016)



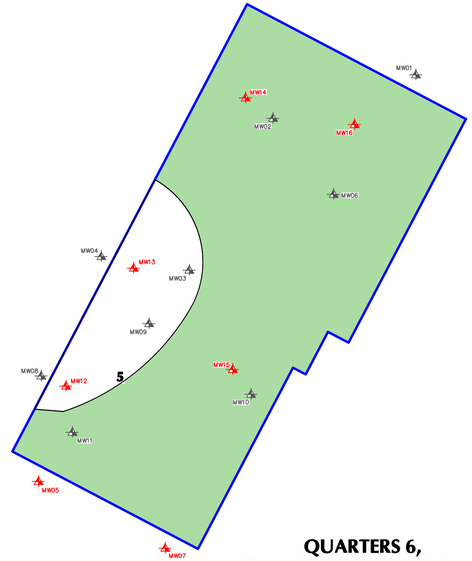
QUARTER 3
(5/24/2016)



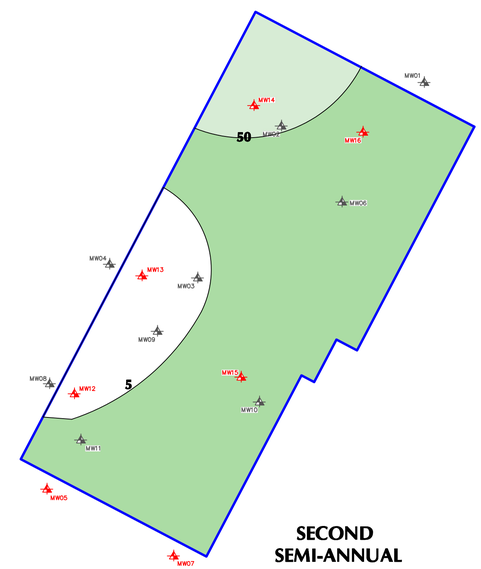
QUARTER 4
(9/9/2016)



QUARTER 5
(12/20/2016)



QUARTERS 6,
7, 8 & FIRST SEMI-ANNUAL
(3/29/2017, 7/10/2017, 10/10/2017 & 4/20/2018)



SECOND
SEMI-ANNUAL
(10/25/2018)

LEGEND:

- SITE BOUNDARY
- MW01 — REMEDIAL INVESTIGATION MONITORING WELL LOCATION
- MW12 — POST-INJECTION PERFORMANCE MONITORING WELL LOCATION

PCE CONCENTRATION (µg/L)

- >1000
- 500 - 1000
- 250 - 500
- 100 - 250
- 50 - 100
- 5 - 50
- 0 - 5

NOTES:

1. MONITORING WELL LOCATIONS WERE SURVEYED BY LANGAN ON FEBRUARY 24 AND OCTOBER 29, 2014, JANUARY 30, 2015, AND NOVEMBER 25, 2015
2. REMEDIAL INVESTIGATION (RI) MONITORING WELLS WERE EITHER ABANDONED VIA THE APPLICATION OF GROUT, OR DESTROYED DURING SITE DEMOLITION.
3. MW-05 AND MW-07 WERE INSTALLED DURING THE RI, AND ARE ALSO USED AS POST-INJECTION PERFORMANCE MONITORING WELLS.
4. POST-INJECTION PERFORMANCE MONITORING WELLS WERE INSTALLED UNDER LANGAN OVERSIGHT IN SEPTEMBER OF 2015 .
5. CONTOUR LINES REPRESENT CONCENTRATIONS OF TETRACHLOROETHYLENE (PCE) IN GROUNDWATER IN MICROGRAMS PER LITER (µg/L).
6. QUARTERS REFER TO THE PERIOD IN WHICH THE PERFORMANCE SAMPLING WAS CONDUCTED.

WARNING:
IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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Project: 535 4TH AVENUE
BLOCK No. 1041, LOT No.1
BROOKLYN
KINGS NEY YORK

Drawing Title: BASELINE AND PERFORMANCE MONITORING PCE CONCENTRATIONS

Project No.	170264501
Date	12/06/18
Drawn By	JED
Checked By	ELS

Drawing No. 4

Sheet 4 of 4

LANGAN PROJECT NO. #### ####

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TABLES

Table 1
Initial Remedial Investigation Groundwater Sample Detection Summary
535 4th Avenue
Brookyln, New York 11215
Langan Project No. 170264501

Well ID		MW01				MW02				MW03				MW04					
Sample ID	NYSDEC TOGS	MW01_021114		MW01_100914		MW02_021114		MW02_100814		MW03_021014		MW03_100814		MW04_021114		MW04_100814		GWDUP01_100814	
Sampling Date	Standards and	2/11/2014		10/9/2014		2/11/2014		10/8/2014		2/10/2014		10/8/2014		2/11/2014		10/8/2014		10/8/2014	
Lab Sample ID	Guidance Values - GA	14B0261-03		14J0446-06		14B0261-01		14J0446-02		14B0220-02		14J0446-01		14B0261-02		14J0446-03		14J0446-04	
Volatile Organic Compounds (µg/L)																			
1,2-Dibromo-3-chloropropane	0.04	NT		*0.80*	U	NT		*4*	U	NT		*4*	U	NT		*4*	U	*4*	U
1,2-Dichloroethane	0.6	0.20	U	0.20	U	0.20	U	*1*	U	0.20	U	*1*	U	0.20	U	*1*	U	*1*	U
1,2-Dichloropropane	1	NT		0.20	U	NT		1	U	NT		1	U	NT		1	U	1	U
1,4-Dichlorobenzene	3	0.20	U	0.20	U	0.20	U	1	U	0.20	U	1	U	0.31	J	1	U	1	U
4-Methyl-2-pentanone	~	NT		0.20	U	NT		1	U	NT		1	U	NT		1	U	1	U
Acetone	50	9.20		1	U	33		5	U	1.70	J	5	U	1	U	10.00	U	8	U
Benzene	1	0.20	U	0.20	U	0.20	U	1	U	0.20	U	1	U	0.20	U	1	U	1	U
Chlorobenzene	5	0.20	U	0.20	U	0.20	U	1	U	0.20	U	1	U	0.20	U	1	U	1	U
Chloroform	7	0.30	J	0.23	J	0.41	J	1	U	0.41	J	1	U	0.54		1	U	1	U
cis-1,2-Dichloroethylene	5	0.20	U	0.20	U	2.40		**10**	**D**	**22**		**16**	**D**	**60**	**D**	**55**	**D**	**56**	**D**
cis-1,3-Dichloropropylene	0.4	NT		0.20	U	NT		*1*	U	NT		*1*	U	NT		*1*	U	*1*	U
Ethyl Benzene	5	0.20	U	0.20	U	0.20	U	1	U	0.20	U	1	U	0.20	U	1	U	1	U
Methyl tert-butyl ether (MTBE)	10	0.26	J	0.29	J	0.20	U	1	U	0.20	U	1	U	0.20	U	1	U	1	U
Methylene chloride	5	1	U	1	U	1	U	5	U	1	U	5	U	1	U	5	U	5	U
o-Xylene	5	0.20	U	0.20	U	0.20	U	1	U	0.20	U	1	U	0.20	U	1	U	1	U
p- & m- Xylenes	5	0.50	U	0.50	U	0.50	U	2.50	U	0.50	U	2.50	U	0.50	U	2.50	U	2.50	U
tert-Butyl alcohol (TBA)	~			0.50	UJ	NT		2.50	UJ	NT		2.50	UJ	NT		2.50	UJ	2.50	UJ
Tetrachloroethylene	5	**12**		**12**		**78**	**D**	**160**	**D**	**340**	**D**	**270**	**D**	**510**	**D**	**370**	**D**	**380**	**D**
Toluene	5	0.20	U	0.20	U	0.20	U	1	U	0.20	U	1	U	0.20	U	1	U	1	U
trans-1,2-Dichloroethylene	5	0.20	U	0.20	U	0.20	U	1	U	0.20	U	1	U	0.67		1	U	1	U
Trichloroethylene	5	0.22	J	0.21	J	1.70		3.20	D	**10**		**7**	**D**	**17**		**9.80**	**D**	**10**	**D**
Vinyl Chloride	2	0.50	U	0.20	U	0.50	U	1	U	0.50	U	1	U	0.50	U	1	U	1	U
Xylenes, Total	5	0.60	U	0.60	U	0.60	U	3	U	0.60	U	3	U	0.60	U	3	U	3	U
Semi-Volatile Organic Compounds (µg/L)																			
Benzo(a)anthracene	0.002	*0.051*	U	*0.051*	U	*0.053*	U	*0.051*	U	*0.054*	U	*0.053*	U	*0.053*	U	*0.051*	UJ	**0.47**	**J**
Benzo(a)pyrene	0.002	*0.051*	UJ	*0.051*	U	*0.053*	U	*0.051*	U	*0.054*	U	*0.053*	U	*0.053*	U	*0.051*	UJ	**0.41**	**J**
Benzo(b)fluoranthene	0.002	*0.051*	UJ	*0.051*	UJ	*0.053*	U	*0.051*	U	*0.054*	U	*0.053*	U	*0.053*	U	*0.051*	UJ	**0.30**	**J**
Benzo(g,h,i)perylene	~	0.051	UJ	0.051	UJ	0.053	U	0.051	U	0.054	U	0.053	U	0.053	U	0.051	U	0.54	
Benzo(k)fluoranthene	0.002	*0.051*	UJ	*0.051*	U	*0.053*	U	*0.051*	U	*0.054*	U	*0.053*	U	*0.053*	U	*0.051*	UJ	**0.38**	**J**
Bis(2-ethylhexyl)phthalate	5	NT		2.91		NT		0.89		NT		2.57		NT		1.14		1.51	
Chrysene	0.002	*0.051*	U	*0.051*	U	*0.053*	U	*0.051*	U	*0.054*	U	*0.053*	U	*0.053*	U	*0.051*	UJ	**0.31**	**J**
Dibenzo(a,h)anthracene	~	0.051	UJ	0.051	UK	0.053	U	0.051	U	0.054	U	0.053	U	0.053	U	0.051	U	0.47	
Fluorene	50	0.051	U	0.051	U	0.053	U	0.051	U	0.054	U	0.053	U	0.053	U	0.051	U	0.10	
Indeno(1,2,3-cd)pyrene	0.002	*0.051*	UJ	*0.051*	UJ	*0.053*	U	*0.051*	U	*0.054*	U	*0.053*	U	*0.053*	U	*0.051*	U	*0.051*	U
Naphthalene	10	0.062	J	0.051	J	0.053	U	0.051	U	0.054	U	0.074		0.053	U	0.062		0.051	U
Phenanthrene	50	0.051	U	0.051	U	0.053	U	0.051	U	0.054	U	0.053	U	0.053	U	0.051	U	0.23	
Pyrene	50	0.051	U	0.051	U	0.053	U	0.051	U	0.054	U	0.053	U	0.053	U	0.051	U	0.29	
Dissolved Metals (µg/L)																			
Aluminum	~	NT		92		NT		10	U	NT		1,900		NT		47		44	
Barium	1000	NT		84		NT		81		NT		167		NT		325		326	
Calcium	~	NT		64,100		NT		165,000		NT		197,000		NT		193,000		196,000	
Chromium	50	NT		5	U	NT		5	U	NT		38		NT		5	U	5	U
Cobalt	~	NT		5	U	NT		5	U	NT		5	U	NT		5	U	5	U
Copper	200	NT		3	U	NT		**1,140**		NT		121		NT		3	U	3	U
Iron	~	NT		114		NT		243		NT		2,820		NT		66		62	
Lead	25	NT		3	U	NT		3		NT		4		NT		3	U	3	U
Magnesium	35000	NT		21,600		NT		**70,000**		NT		**78,500**		NT		**61,300**		**62,200**	
Manganese	300	NT		169		NT		71		NT		115		NT		33		28	
Nickel	100	NT		5	U	NT		6		NT		22		NT		5	U	5	U
Potassium	~	NT		4,530		NT		4,530		NT		4,220		NT		6,640		6,690	
Selenium	10	NT		10	U	NT		**30**		NT		10	U	NT		**15**		**16**	
Sodium	20000	NT		**41,100**	**B**	NT		**64,900**	**B**	NT		**171,000**	**B**	NT		**465,000**	**B**	**469,000**	**B**
Thallium	~	NT		5	U	NT		5	U	NT		5	U	NT		5	U	5	U
Vanadium	~	NT		10	U	NT		10	U	NT		10	U	NT		10	U	10	U
Zinc	2000	NT		10		NT		83		NT		98		NT		14		12	
Total Metals (µg/L)																			
Aluminum	~	NT		10	U	NT		10	U	NT		10	U	NT		10	U	10	U
Barium	1000	NT		81		NT		80		NT		149		NT		329		326	
Calcium	~	NT		63,400		NT		165,000		NT		192,000		NT		197,000		197,000	
Chromium	50	NT		5	U	NT		5	U	NT		5	U	NT		5	U	5	U
Cobalt	~	NT		5	U	NT		5	U	NT		5	U	NT		5	U	5	U
Copper	200	NT		3	U	NT		130		NT		9		NT		3	U	3	U
Iron	~	NT		20	U	NT		37		NT		96		NT		20	U	20	U
Lead	25	NT		3	U	NT		3	U	NT		3	U	NT		3	U	3	U
Magnesium	35000	NT		21,200		NT		**69,700**		NT		**79,300**		NT		**61,900**		**62,100**	
Manganese	300	NT		150		NT		62		NT		15		NT		27		26	
Nickel	100	NT		5	U	NT		5		NT		5	U	NT		5	U	5	U
Potassium	~	NT		4,340		NT		4,450		NT		3,480		NT		6,520		6,520	
Selenium	10	NT		10		NT		**28**		NT		**16**		NT		**16**		**13**	
Sodium	20000	NT		**40,900**		NT		**64,300**		NT		**167,000**		NT		**464,000**		**460,000**	
Vanadium	~	NT		10	U	NT		10	U	NT		10	U	NT		10	U	10	U
Zinc	2000	NT		13		NT		70		NT		57		NT		15		16	

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. µg/L = micrograms per liter
3. "~" = Criterion does not exist
4. NT = Sample not tested for constituent
5. Only detected compounds are shown in the table.
6. Groundwater sample analysis results exceeding NYSDEC TOGS AWQS are highlighted and in **bold.**
7. Groundwater sample analysis results whose detection limits exceed NYSDEC TOGS AWQS are *italicized*.
8. GWDUP01_100814 is a duplicate sample of MW04_100814.

Qualifiers:
D = result is from an analysis that required a dilution
J = Estimated value. The target analyte concentration is below the reporting limit, but greater than or equal to the method detection limit (MDL) or limit of detection (LOD).
U = analyte not detected at or above the level indicated
B = analyte found in the analysis batch blank
E = result is estimated and cannot be accurately reported due to levels encountered or interferences

Table 1
Initial Remedial Investigation Groundwater Sample Detection Summary
535 4th Avenue
Brookyln, New York 11215
Langan Project No. 170264501

Well ID		MW05		MW06		MW07	MW08	MW09	MW10	MW11
Sample ID	NYSDEC TOGS	MW05_021114	MW05_100914	MW06_021014	MW06_100914	MW07_110214	MW08_103114	MW09_110214	MW10_103114	MW11_012915
Sampling Date	Standards and	2/11/2014	10/9/2014	2/10/2014	10/9/2014	11/2/2014	10/31/2014	11/2/2014	10/31/2014	1/29/2015
Lab Sample ID	Guidance Values - GA	14B0261-04	14J0446-05	14B0220-01	14J0446-07	14K0070-02	14K0021-02	14K0070-01	14K0021-01	15A0884-01
Volatile Organic Compounds (µg/L)										
1,2-Dibromo-3-chloropropane	0.04	NT	*0.80* U	NT	*0.80* U	*0.20* U	*0.20* U	*0.20* U	*0.20* U	0.20 U
1,2-Dichloroethane	0.6	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**3.50**	0.20 U	0.20 U
1,2-Dichloropropane	1	NT	0.20 U	NT	0.20 U	0.20 U	0.20 U	0.23 J	0.20 U	0.20 U
1,4-Dichlorobenzene	3	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.50 UJ	0.20 UJ	0.20 UJ	0.20 U
4-Methyl-2-pentanone	~	NT	0.20 U	NT	0.20 U	0.20 U	0.20 U	0.28 J	0.20 U	0.20 U
Acetone	50	9.80	1 U	1 U	1 U	4.20 U	1 U	11 U	1 UJ	1 U
Benzene	1	0.20 U	0.20 U	0.20 U	0.20 U	0.30 J	0.21 J	**17**	0.20 U	0.20 U
Chlorobenzene	5	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.24 J	0.35 J	0.20 U	0.20 U
Chloroform	7	0.27 J	0.20 U	0.41 J	0.28 J	0.45 J	2.50	1.20	0.22 J	0.20 U
cis-1,2-Dichloroethylene	5	0.66	0.44 J	0.20 U	0.20 U	0.28 J	**230 D**	0.47 J	0.20 U	0.72
cis-1,3-Dichloropropylene	0.4	NT	0.20 U	NT	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Ethyl Benzene	5	0.20 U	0.20 U	0.20 U	0.20 U	0.22 J	0.20 U	0.87	0.20 U	0.20 U
Methyl tert-butyl ether (MTBE)	10	0.20 U	0.20 U	0.35 J	0.31 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Methylene chloride	5	1 U	1 U	1 U	1 U	*8.80* U	1 U	*8.80* U	1 U	1 U
o-Xylene	5	0.20 U	0.20 U	0.20 U	0.20 U	0.35 J	0.20 U	0.40 J	0.20 U	0.20 U
p- & m- Xylenes	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.54 J	0.50 U	0.50 U
tert-Butyl alcohol (TBA)	~	NT	0.50 UJ	NT	0.50 UJ	0.50 U	0.50 U	29	0.50 U	0.50 U
Tetrachloroethylene	5	**37**	**45 D**	**16**	**12**	**11**	**2,200 D**	**10**	**23**	**61 D**
Toluene	5	0.20 U	0.20 U	0.20 U	0.20 U	1.40	0.20 U	3	0.20 U	0.20 U
trans-1,2-Dichloroethylene	5	0.20 U	0.26 J	0.20 U	0.20 U	0.20 U	1.10	2.20	0.20 U	0.20 U
Trichloroethylene	5	1.10	1.10	0.20 J	0.20 U	0.23 J	**47 D**	0.36 J	0.28 J	1.90
Vinyl Chloride	2	0.50 U	0.20 U	0.50 U	0.20 U	0.20 U	0.39 J	0.20 U	0.20 U	0.20 U
Xylenes, Total	5	0.60 U	0.60 U	0.60 U	0.60 U	0.84 J	0.60 U	0.94 J	0.60 U	0.60 U
Semi-Volatile Organic Compounds (µg/L)										
Benzo(a)anthracene	0.002	*0.053* U	*0.057* U	*0.051* U	*0.054* U	*0.063* U	*0.057* U	*0.054* U	*0.059* U	NT
Benzo(a)pyrene	0.002	*0.053* U	*0.057* U	*0.051* U	*0.054* U	*0.063* U	*0.057* U	*0.054* U	*0.059* U	NT
Benzo(b)fluoranthene	0.002	*0.053* U	*0.057* U	*0.051* U	**0.12**	*0.063* U	*0.057* U	*0.054* U	*0.059* U	NT
Benzo(g,h,i)perylene	~	0.053 U	0.057 U	0.051 U	0.087	0.063 U	0.057 U	0.054 U	0.059 U	NT
Benzo(k)fluoranthene	0.002	*0.053* U	*0.057* U	*0.051* U	**0.087**	*0.063* U	*0.057* U	*0.054* U	*0.059* U	NT
Bis(2-ethylhexyl)phthalate	5	NT	1.35	NT	1.12	*21.80* U	0.811 U	1.81 U	1.22 U	NT
Chrysene	0.002	*0.053* U	*0.057* U	*0.051* U	*0.054* U	*0.063* U	*0.057* U	*0.054* U	*0.059* U	NT
Dibenzo(a,h)anthracene	~	0.053 U	0.057 U	0.051 U	0.065	0.063 U	0.057 U	0.054 U	0.059 U	NT
Fluorene	50	0.053 U	0.057 U	0.051 U	0.054 U	0.063 U	0.057 U	0.054 U	0.18	NT
Indeno(1,2,3-cd)pyrene	0.002	*0.053* U	*0.057* U	*0.051* U	**0.076**	*0.063* U	*0.057* U	*0.054* U	*0.059* U	NT
Naphthalene	10	0.053 J	0.057 U	0.051 U	0.054 U	0.063 U	0.057 U	0.12	0.059 U	NT
Phenanthrene	50	0.053 U	0.057 U	0.072	0.054 U	0.063 U	0.057 U	0.054 U	0.059 U	NT
Pyrene	50	0.053 U	0.069	0.051 U	0.054 U	0.063 U	0.057 U	0.054 U	0.059 U	NT
Dissolved Metals (µg/L)										
Aluminum	~	NT	2,780	NT	808	80 U	97	72 U	133	NT
Barium	1000	NT	121	NT	57	54	199	478	78	NT
Calcium	~	NT	58,200	NT	47,400	30,700	290,000	162,000	128,000	NT
Chromium	50	NT	23	NT	13	5 U	5 U	5 U	5 U	NT
Cobalt	~	NT	5 U	NT	5 U	5 U	5 U	31	5 U	NT
Copper	200	NT	8	NT	3 U	4 U	3 U	3 U	5	NT
Iron	~	NT	4,440	NT	1,290	20 U	20 U	7,850	20 U	NT
Lead	25	NT	4	NT	3 U	3 U	8 J	4 U	8 J	NT
Magnesium	35000	NT	24,200	NT	16,500	7,270	**103,000**	30,800	**51,500**	NT
Manganese	300	NT	**410**	NT	85	232	137	**9,060**	108	NT
Nickel	100	NT	17	NT	12	5 U	5 U	**122**	5 U	NT
Potassium	~	NT	5,410	NT	5,150	8,770	7,520	14,300	3,870	NT
Selenium	10	NT	10 U	NT	10	10 U	**57**	**35**	**38**	NT
Sodium	20000	NT	**144,000 B**	NT	17,600 B	**110,000**	**499,000**	**196,000**	**44,400**	NT
Thallium	~	NT	5 U	NT	5 U	5 U	5 U	5 U	5 U	NT
Vanadium	~	NT	10 U	NT	10 U	10 U	10 U	10 U	10 U	NT
Zinc	2000	NT	25	NT	15	10 U	20	41 U	15	NT
Total Metals (µg/L)										
Aluminum	~	NT	10 U	NT	10 U	4,480	5,910	7,160	8,060	NT
Barium	1000	NT	82	NT	46	133	267	622	179	NT
Calcium	~	NT	57,400	NT	47,800	45,600	307,000	174,000	146,000	NT
Chromium	50	NT	5 U	NT	5 U	21	14	**99**	15	NT
Cobalt	~	NT	5 U	NT	5 U	5 U	6	38	8	NT
Copper	200	NT	3 U	NT	3 U	17 U	17	44	33	NT
Iron	~	NT	20 U	NT	20 U	7,550	8,410	51,800	10,700	NT
Lead	25	NT	3 U	NT	3 U	8	8	16	12	NT
Magnesium	35000	NT	22,700	NT	15,900	13,600	**115,000**	**35,800**	**60,700**	NT
Manganese	300	NT	36	NT	22	**689**	**469**	**9,540**	**693**	NT
Nickel	100	NT	5 U	NT	6	16	20	**156**	22	NT
Potassium	~	NT	4,360	NT	4,660	10,300	9,900	17,600	6,480	NT
Selenium	10	NT	**12**	NT	**12**	**12**	**48**	**41**	**39**	NT
Sodium	20000	NT	**142,000**	NT	17,500	**137,000 B**	**516,000 B,E**	**208,000 B**	**48,300 B**	NT
Vanadium	~	NT	10 U	NT	10 U	10 U	13	15	16	NT
Zinc	2000	NT	10	NT	11	70	46	108	64	NT

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. µg/L = micrograms per liter
3. "~" = Criterion does not exist
4. NT = Sample not tested for constituent
5. Only detected compounds are shown in the table.
6. Groundwater sample analysis results exceeding NYSDEC TOGS AWQS are highlighted and in **bold.**
7. Groundwater sample analysis results whose detection limits exceed NYSDEC TOGS AWQS are *italicized*.
8. GWDUP01_100814 is a duplicate sample of MW04_100814.

Qualifiers:
D = result is from an analysis that required a dilution
J = Estimated value. The target analyte concentration is below the reporting limit, but greater than or equal to the method detection limit (MDL) or limit of detection (LOD).
U = analyte not detected at or above the level indicated
B = analyte found in the analysis batch blank
E = result is estimated and cannot be accurately reported due to levels encountered or interferences

Table 2
Second Semi-Annual Groundwater Monitoring Results (VOCs)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample Location	NYSDEC TOGS	MW05									MW07									
Sample ID	Standards and	MW05_021114	MW05_100914	MW05_022416	MW05_122016	MW05_032817	MW05_071017	MW05_101017	MW05_042018	MW05_102518	MW07_110214	MW07_022416	MW07_052316	MW07_090916	MW07_122116	MW07_032817	MW07_071017	MW07_101017	MW07_042018	MW07_102518
Lab Sample ID	Guidance	14B0261-04	14J0446-05	16B0816-03	16L0844-08	17C1049-03	17G0203-06	17J0456-02	18D0893-01	18J1263-02	14K0070-02	16B0816-04	16E0944-03	16I0330-03	16L0909-01	17C1049-02	17G0203-01	17J0456-07	18D0893-02	18J1263-03
Sample Date	Values - GA	2/11/2014	10/9/2014	2/24/2016	12/20/2016	3/28/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018	11/2/2014	2/24/2016	5/23/2016	9/9/2016	12/21/2016	3/28/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018
Volatile Organic Compounds (µg/L)		Initial	Initial	Quarter 2	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual	Initial	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual
1,1,1-Trichloroethane	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethylene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trimethylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.24 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	0.6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U
1,4-Dioxane (P-Dioxane)	~	40 U	40 U	80 U	40 U	40 U	40 U	40 UJ	40 UJ	40.0 UJ	40 U	80 U	40 U	40 U	40 U	40 U	40 U	40 UJ	40 UJ	40 UJ
Acetone	50	9.8	1 U	1 U	2.1 U	1 U	1 U	1 U	1 U	1.0 UJ	4.2 U	1 U	1 U	1.1 J	1.7 U	1 U	1 U	1 U	1 U	1 UJ
Benzene	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	0.2 U	0.2 U	0.2 U	0.3 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	7	0.27 J	0.2 U	4.5	2.1	0.62	1.8	1.5	0.5	0.3 J	0.45 J	1	0.37 J	0.31 J	0.22 J	0.2 U	0.33 J	0.27 J	0.28 J	0.27 J
cis-1,2-Dichloroethylene	5	0.66	0.44 J	0.2 U	0.36 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.28 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.25 U	0.2 U	0.2 U	0.2 U	0.22 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methyl Ethyl Ketone (2-Butanone)	50	1.1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 UJ	1.8	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ
Methyl tert-butyl ether (MTBE)	10	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	8.8 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	10	NT	NT	1 U	1 U	NT	1 U	NT	1 U	1.0 UJ	NT	1 U	1 U	1 U	1 U	NT	1 U	NT	1 U	1 UJ
n-Butylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Propylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene (1,2-Dimethylbenzene)	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.35 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
p, m-Xylene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethylene (PCE)	5	**37**	**45** D	**34**	**27**	**17**	**10**	**10**	**11.2**	**7.29** J	**11**	**35**	**21** J	**40**	**30** J	**32**	**20**	**26**	**27.5**	**23.3** J
Toluene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1.4	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	5	0.2 U	0.26 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.25 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethylene (TCE)	5	1.1	1.1	0.52	1.2	0.45 J	0.38 J	0.27 J	0.23 J	0.2 U	0.23 J	0.76	0.56	0.64	0.71	0.63	0.7	0.57	0.54	0.49 J
Vinyl Chloride	2	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U,J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Xylenes, Total	5	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.84 J	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Total VOCs and CVOCs (µg/L)																				
Total VOCs	~	49.93	46.8	39.02	30.66	18.07	12.18	11.77	11.93	7.56	17.11	37.01	21.93	42.05	31.13	32.63	21.03	26.84	28.32	24.06
Total CVOCs	~	38.76	46.8	34.52	28.56	17.45	10.38	10.27	11.4	7.3	11.51	36.01	21.56	40.84	30.91	32.63	20.7	26.57	28.04	23.79

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. Groundwater sample analysis results exceeding NYSDEC TOGS AWQS are highlighted and in bold.
3. MW05 and MW07 are located off-site.
4. Initial = Pre-injection groundwater sampling
5. VOC = volatile organic compond
6. CVOC = chlorinated volatile organic compound
7. µg/L = micrograms per liter
8. NT = Sample not tested for constituent
9. D = Concentrations of analyte was quantified from diluted analysis.
10. J = The analyte was detected above the Method Detection Limit (MDL), but below the Reporting Limit (RL); therefore, the result is an estimated concentration.
11. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
12. ~ = No standard or guidance value for this compound
13. MW05 was not sampled during quarter 3 and 4 due to inaccessibility.

Table 2
Second Semi-Annual Groundwater Monitoring Results (VOCs)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample Location	NYSDEC TOGS	MW12											MW13									
Sample ID	Standards and	MW12_112015	MW12_022316	MW12_052416	MW12_090916	MW12_122016	MW12_032917	MW12_071017	MW12_101017	MW12_042018	MW12_102518		MW13_112015	MW13_022316	MW13_052416	MW13_090816	MW13_122016	MW13_032917	MW13_071017	MW13_101017	MW13_042018	MW13_102518	
Lab Sample ID	Guidance	15K0769-03	16B0761-03	16E1019-03	16I0330-01	16L0844-05	17C1105-01	17G0203-02	17J0456-06	18D0893-03	18J1263-06		15K0769-04	16B0761-05	16E1019-02	16I0285-05	16L0844-06	17C1105-02	17G0203-03	17J0456-05	18D0893-03	18J1263-05	
Sample Date	Values - GA	11/20/2015	2/23/2016	5/24/2016	9/9/2016	12/20/2016	3/29/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018		11/20/2015	2/23/2016	5/24/2016	9/8/2016	12/20/2016	3/29/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018	
Volatile Organic Compounds (µg/L)		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual	
1,1,1-Trichloroethane	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,1-Dichloroethane	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,1-Dichloroethene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,2,4-Trimethylbenzene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,2-Dichlorobenzene	3	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,2-Dichloroethane	0.6	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,3,5-Trimethylbenzene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,3-Dichlorobenzene	3	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,4-Dichlorobenzene	3	0.38 J	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	
1,4-Dioxane (P-Dioxane)	~	40 U	4000 U	2000 U	40 U	40 U	40 U	40 U	40 UJ	40 UJ	40 UJ		80 U	800 U	400 U	40 U	40 U	40 U	40 U	40 UJ	40 UJ	40 UJ	
Acetone	50	**21000** D	**6900** D	**5900** BD	**410** D	**260** BD	**1800** D	**380** D	**87**	4.32	2.91 J		**240** D	**1200** DE	**1100** D	**430** J	38 BD	**210** D	9.8 U	33	1.81 J	4.72 J	
Benzene	1	0.2 U	20 U	10 U	0.2 U	0.2 U	0.95	0.25 J	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Carbon Tetrachloride	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Chlorobenzene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Chloroform	7	0.35 J	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 J	0.2 U	0.2 U	0.2 U		0.46 JD	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 J	0.2 U	0.2 U	0.2 U	
cis-1,2-Dichloroethylene	5	**20**	**90** D	**14** JD	2.7	2.1	1.6	1.8	0.91	1.15	1.16		**29** D	**270** D	**55** D	**11**	**15**	**16**	**31** J	5	4	4	
Ethylbenzene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Methyl Ethyl Ketone (2-Butanone)	50	**240** D	**210** D	**230** D	**91**	45	**51**	18	4.7	0.61	0.20 UJ		0.4 U	**110** D	**55** D	36	19	45	0.2 U	8.1	0.2 U	0.2 UJ	
Tert-Butyl Methyl Ether (MTBE)	10	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Methylene Chloride	5	1 U	100 U	50 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U		2 U	20 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Naphthalene	10	1 U	100 U	50 U	1 U	1 U	NT	1 U	NT	1 U	1 UJ		2 U	20 U	10 U	1 U	1 U	NT	1 U	NT	1 U	1 UJ	
n-Butylbenzene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
n-Propylbenzene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
o-Xylene (1,2-Dimethylbenzene)	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
m,p-Xylene	5	0.5 U	50 U	25 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		1 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
sec-Butylbenzene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
tert-Butylbenzene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Tetrachloroethylene(PCE)	5	**140**	20 U	10 U	2.4	3.9	5 J	0.41 J	1.1	0.89	3.82 J		**270** D	**63** D	3.7 J	4	**7.2**	3.8 J	2.5	2.4	2.53	2.48 J	
Toluene	5	0.52	20 U	10 U	0.33 J	0.46 J	0.61	0.72 U	0.570	0.250 J	0.300 J		0.4 U	4 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 J	0.2 U	0.2 U	
trans-1,2-Dichloroethene	5	0.2 U	20 U	10 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		0.4 U	4 U	2 U	0.42 J	0.37 J	0.62	0.36 J	0.380 J	0.260 J	0.200 J	
Trichloroethylene (TCE)	5	**42**	20 U	10 U	3.4	3	2.6	1.5	1.1	1.7	1.5		**9.6** D	**21** D	2 U	2.2	3.3	2.8	3.3	2.4	2.96	1.78	
Vinyl Chloride	2	0.25 J	20 U	10 U	**2.4** J	1.5	1.4	0.71	0.34 J	0.83	1.14		0.4 U	4 U	**11** D	0.2 U	**7.2**	**15**	**10**	2	**5.61**	**7.55**	
Xylenes, Total	5	0.6 U	60 U	30 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U		1.2 U	12 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	
Total VOCs and CVOCs (µg/L)																							
Total VOCs	~	21443.5	7200	6144	512.23	315.96	1863.16	402.87	95.72	9.73	10.83		549.06	1664	1224.7	483.62	90.07	293.22	47.56	53.28	16.87	20.95	
Total CVOCs	~	202.25	90	14	10.9	10.5	10.6	4.42	3	4.55	7.62		308.6	354	69.7	17.62	33.07	38.22	47.16	12	15.06	16.23	

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. Groundwater sample analysis results exceeding NYSDEC TOGS AWQS are highlighted and in bold.
3. MW05 and MW07 are located off-site.
4. Initial = Pre-injection groundwater sampling
5. VOC = volatile organic compond
6. CVOC = chlorinated volatile organic compound
7. µg/L = micrograms per liter
8. NT = Sample not tested for constituent
9. D = Concentrations of analyte was quantified from diluted analysis.
10. J = The analyte was detected above the Method Detection Limit (MDL), but below the Reporting Limit (RL); therefore, the result is an estimated concentration.
11. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
12. ~ = No standard or guidance value for this compound
13. MW05 was not sampled during quarter 3 and 4 due to inaccessibility.

Table 2
Second Semi-Annual Groundwater Monitoring Results (VOCs)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample Location	NYSDEC TOGS	MW14										MW15									
Sample ID	Standards and	MW14_112315	MW14_022416	MW14_052316	MW14_090816	MW14_122116	MW14_032917	MW14_071017	MW14_101017	MW14_042018	MW14_102518	MW15_112315	MW15_022416	MW15_052416	MW15_090916	MW15_122016	MW15_032917	MW15_071017	MW15_101017	MW15_042018	MW15_102518
Lab Sample ID	Guidance	15K0828-02	16B0816-01	16E0944-02	16I0285-04	16L0909-02	17C1105-03	17G0203-05	17J0456-03	18D0893-04	18J1263-04	15K0828-03	16B0816-02	16E1019-01	16I0330-02	16L0844-04	17C1105-04	17G0203-04	17J0456-04	18D0893-06	18J1263-07
Sample Date	Values - GA	11/23/2015	2/24/2016	5/23/2016	9/8/2016	12/21/2016	3/29/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018	11/23/2015	2/24/2016	5/24/2016	9/9/2016	12/20/2016	3/29/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018
Volatile Organic Compounds (µg/L)		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual
1,1,1-Trichloroethane	5	0.2 U	2.8	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.29 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trimethylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	0.6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	**0.7**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene (Mesitylene)	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U
1,4-Dioxane (P-Dioxane)	~	40 U	80 U	40 U	40 U	40 U	40 U	40 U	40 UJ	40 UJ	40 UJ	40 U	80 U	40 U	40 U	40 U	40 U	40 U	40 UJ	40 UJ	40 UJ
Acetone	50	1 U	1 U	1 U	3.2 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	3.4	1.2 U	2 U	1 U	1 U	1 U	1 UJ
Benzene	1	0.2 UJ	0.2 U	0.2 U	0.2 U	0.22 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.29 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	7	0.94	0.32 J	0.28 J	0.25 J	0.23 J	0.2 U	0.28 J	0.2 U	0.2 U	0.2 J	0.2 U	0.33 J	0.38 J	0.2 U	0.44 J	0.2 U	0.58	0.39 J	0.39 J	0.56
cis-1,2-Dichloroethylene	5	**62**	**98**	**76**	**82**	**74** D	**30**	**44** D	**50**	**38.9**	**43.1**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methyl Ethyl Ketone (2-Butanone)	50	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 U	0.66	0.2 U	0.86 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ
Tert-Butyl Methyl Ether (MTBE)	10	0.99	1.1	1.2	1	1.5 J	0.58	1.1	0.860	0.780	0.740	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	10	1 U	1 U	1 U	1 U	6.9 J	NT	1 U	NT	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	NT	1 U	NT	1 U	1 UJ
n-Butylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Propylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene (1,2-Dimethylbenzene)	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethylene (PCE)	5	**52**	**63**	**43** J	**51**	**38** J	**19** J	**30** J	**46**	**46.3**	**53.3** J	**5.7**	**25**	**31** J	**12**	**31**	**21** J	**16**	**17**	**13.2**	**8.29** J
Toluene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	5	0.47 J	0.55	1.2	1	0.41 J	0.21 J	0.2 U	0.4 J	0.3 J	0.3 J	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethylene (TCE)	5	**14**	**17**	**13**	**14**	**13**	**6.4**	**11**	**11**	**9.76**	**11.4**	0.2 U	0.32 J	0.44 J	0.22 J	0.44 J	0.32 J	0.31 J	0.2 U	0.21 J	0.20 U
Vinyl Chloride	2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Xylenes, Total	5	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Total VOCs and CVOCs (µg/L)																					
Total VOCs	~	130.4	182.77	134.68	149.25	134.26	56.19	86.38	108.26	96.69	109.07	5.99	26.31	32.11	16.48	31.88	21.32	16.89	17.39	13.8	8.85
Total CVOCs	~	128.47	178.55	133.2	148	125.41	55.61	85	107	95.21	108.11	5.9	25.32	31.44	12.42	31.44	21.32	16.31	17.00	13.41	8.29

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. Groundwater sample analysis results exceeding NYSDEC TOGS AWQS are highlighted and in bold.
3. MW05 and MW07 are located off-site.
4. Initial = Pre-injection groundwater sampling
5. VOC = volatile organic compond
6. CVOC = chlorinated volatile organic compound
7. µg/L = micrograms per liter
8. NT = Sample not tested for constituent
9. D = Concentrations of analyte was quantified from diluted analysis.
10. J = The analyte was detected above the Method Detection Limit (MDL), but below the Reporting Limit (RL); therefore, the result is an estimated concentration.
11. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
12. ~ = No standard or guidance value for this compound
13. MW05 was not sampled during quarter 3 and 4 due to inaccessibility.

Table 2
Second Semi-Annual Groundwater Monitoring Results (VOCs)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample Location	NYSDEC TOGS	MW16																							
Sample ID	Standards and	MW16_112015	DUP01_112015	MW16_022316	DUP01_022316	MW16_052316	DUP01_052316	MW16_090816	DUP01_090816	MW16_122016	DUP01_122016	MW16_032817	DUP01_032817	MW16_071017	DUP01_071017	MW16_101017	DUP01_101017	MW16_04202018	DUP01_042018	MW16_102518	DUP01_102518
Lab Sample ID	Guidance	15K0769-05	15K0769-06	16B0761-01	16B0761-02	16E0944-01	16E0944-04	16I0285-03	16I0285-06	16L0844-03	16L0844-07	17C1049-01	17C1049-04	17G0203-07	17G0203-08	17J0456-01	17J0456-08	18D0893-07	18D0893-08	18J1263-01	18J1263-08
Sample Date	Values - GA	11/20/2015	11/20/2015	2/23/2016	2/23/2016	5/23/2016	5/23/2016	9/8/2016	9/8/2016	12/20/2016	12/20/2016	3/28/2017	3/28/2017	7/10/2017	7/10/2017	10/10/2017	10/10/2017	4/20/2018	4/20/2018	10/25/2018	10/25/2018
Volatile Organic Compounds (µg/L)		Quarter 1		Quarter 2		Quarter 3		Quarter 4		Quarter 5		Quarter 6		Quarter 7		Quarter 8		1st Semi Annual		2nd Semi Annual	
1,1,1-Trichloroethane	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trimethylbenzene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	3	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	0.6	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene (Mesitylene)	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	3	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	3	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dioxane (P-Dioxane)	~	40 U	40 U	800 U	800 U	80 U	80 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 UJ	40 UJ	40 UJ	40 UJ	40 UJ	40 UJ
Acetone	50	2.3	1.1 J	**1200** D	**1200** D	**410** D	**370** D	1.5 U	3 U	4.8 U	7.9 U	1.2 J	1.2 J	1 J	1 J	14	14	1 U	1 U	1 UJ	1 UJ
Benzene	1	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	7	2.6	2.5	4 U	4 U	0.4 U	0.4 U	0.23 J	0.22 J	0.22 J	0.3 J	0.2 U	0.2 U	0.52	0.6	0.2 U	0.22 J	0.20 U	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethylene	5	1.1	1.1	**41** D	**38** D	**20** D	**20** D	**19**	**19**	**27**	**24**	**25**	**23**	**10**	**11**	**9.1**	**8.9**	**7.8**	**7.89**	**14.8**	**14.60**
Ethylbenzene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methyl Ethyl Ketone (2-Butanone)	50	0.2 U	0.2 U	**62** D	**59** D	22 D	20 D	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.8	0.2 U	0.2 U	0.2 UJ	0.2 UJ
Tert-Butyl Methyl Ether (MTBE)	10	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	5	1 U	1 U	20 U	20 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	10	1 U	1 U	20 U	20 U	2 U	2 U	1 U	1 U	1 U	1 U	NT	NT	1 U	1 U	NT	NT	1 U	1 U	1 UJ	1 UJ
n-Butylbenzene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Propylbenzene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene (1,2-Dimethylbenzene)	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylene	5	0.5 U	0.5 U	10 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethylene(PCE)	5	**110**	**120**	**62** D	**58** D	**62** J	**65** J	**83** E	**86** E	**39** D	**48** D	**33**	**40**	**20**	**15**	**20**	**21**	**18.2**	**18.7**	**7.96** J	**7.81** J
Toluene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	5	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethylene (TCE)	5	2.4	2.4	4.6 JD	4 U	3.6 D	3.6 D	4.4	4.5	4.6	4.5	2.9	2.8	2.3	1.9	2.2	2.1	1.77	1.79	2.30	2.25
Vinyl Chloride	2	0.2 U	0.2 U	4 U	4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.66	0.59	0.86	0.76	0.28 J	0.29 J	1.1	1.1	0.78	0.8	**3.56**	**3.52**
Xylenes, Total	5	0.6 U	0.6 U	12 U	12 U	1.2 U	1.2 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Total VOCs and CVOCs (µg/L)																					
Total VOCs	~	118.4	127.1	1369.6	1355	517.6	478.6	106.63	109.72	71.48	77.39	62.96	67.76	34.1	29.79	46.4	50.12	28.55	29.18	28.62	28.18
Total CVOCs	~	113.5	123.5	107.6	96	85.6	88.6	106.4	109.5	71.26	77.09	61.76	66.56	32.58	28.19	32.4	33.1	28.6	29.18	28.6	28.18

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. Groundwater sample analysis results exceeding NYSDEC TOGS AWQS are highlighted and in bold.
3. MW05 and MW07 are located off-site.
4. Initial = Pre-injection groundwater sampling
5. VOC = volatile organic compond
6. CVOC = chlorinated volatile organic compound
7. µg/L = micrograms per liter
8. NT = Sample not tested for constituent
9. D = Concentrations of analyte was quantified from diluted analysis.
10. J = The analyte was detected above the Method Detection Limit (MDL), but below the Reporting Limit (RL); therefore, the result is an estimated concentration.
11. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
12. ~ = No standard or guidance value for this compound
13. MW05 was not sampled during quarter 3 and 4 due to inaccessibility.

Table 3
Second Semi-Annual Groundwater Monitoring Results (Geochemical and Biological Parameters)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample Location	NYSDEC TOGS	MW05									MW07									
Sample ID	Standards and	MW05_021114	MW05_100914	MW05_022416	MW05_122016	MW05_032817	MW05_071017	MW05_101017	MW05_042018	MW05_102518	MW07_110214	MW07_022416	MW07_052316	MW07_090916	MW07_122116	MW07_032817	MW07_071017	MW07_101017	MW07_042018	MW07_102518
Lab Sample ID	Guidance	14B0261-04	14J0446-05	16B0816-03	16L0844-08	17C1049-03	17G0203-06	17J0456-02	18D0893-01	18J1263-02	14K0070-02	16B0816-04	16E0944-03	16I0330-03	16L0909-01	17C1049-02	17G0203-01	17J0456-07	18D0893-02	18J1263-03
Sample Date	Values - GA	2/11/2014	10/9/2014	2/24/2016	12/20/2016	3/28/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018	11/2/2014	2/24/2016	5/23/2016	9/9/2016	12/21/2016	3/28/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018
		Initial	Initial	Quarter 2	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual	Initial	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual
Methane, Ethane & Ethylene (µg/L)																				
Ethane	~	NT	NT	10 U	10 U	10 U	NT	NT	NT	NT	NT	10 U	10 U	10 U	10 U	10 U	NT	NT	NT	NT
Ethylene (Ethene)	~	NT	NT	10 U	10 U	10 U	NT	NT	NT	NT	NT	10 U	10 U	10 U	10 U	10 U	NT	NT	NT	NT
Methane	~	NT	NT	10 U	10 U	10 U	NT	NT	NT	NT	NT	10 U	10 U	10 U	10 U	10 U	NT	NT	NT	NT
Total Metals (µg/L)																				
Antimony	3	NT	5 U	NT	NT	NT	NT	NT	NT	NT	5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT
Manganese	300	NT	**410**	NT	NT	NT	NT	NT	NT	NT	**689**	NT	NT	NT	NT	NT	NT	NT	NT	NT
Selenium	10	NT	10 U	NT	NT	NT	NT	NT	NT	NT	**12**	NT	NT	NT	NT	NT	NT	NT	NT	N
Sodium	20000	NT	**144000** B	NT	NT	NT	NT	NT	NT	NT	**137000** B	NT	NT	NT	NT	NT	NT	NT	NT	NT
Dissolved Metals (µg/L)																				
Antimony	3	NT	5 U	NT	NT	NT	NT	NT	NT	NT	5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT
Selenium	10	NT	**12**	NT	NT	NT	NT	NT	NT	NT	10 U	NT	NT	NT	NT	NT	NT	NT	NT	NT
Sodium	20000	NT	**142000**	NT	NT	NT	NT	NT	NT	NT	**110000**	NT	NT	NT	NT	NT	NT	NT	NT	NT
Thallium	~	NT	5 U	NT	NT	NT	NT	NT	NT	NT	5 U	NT	NT	NT	NT	NT	NT	NT	NT	NT
Iron (µg/L)																				
Total	300	NT	**4440**	**2510**	**39000**	**2330**	**518**	**685**	264	**3410** J	**7550**	**18000**	**5420**	**15000**	**5820**	**5840**	**18400**	**1790**	**15700**	**2900** J
Dissolved	300	NT	20 U	58.5	22.200 U	107	22.2	22.2 U	22.2	278 U	20 U	59.9	96.3	46.2	172	253	239	34	22.2	278 U
General Chemistry (µg/L)																				
Alkalinity	~	NT	NT	120000	200000	175000	NT	NT	NT	NT	NT	432000	500000	515000	450000	365000	NT	NT	NT	NT
Chloride	250000	NT	NT	222000 D	**311000** D	227000 D	NT	NT	NT	NT	NT	**937000** DE	**1730000** DE	**2180000** J	**2330000** JD	**2810000** DE	NT	NT	NT	NT
Nitrate	10000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	967 D	2910 D	NT	NT	NT	NT	NT	NT
Nitrite	1000	NT	NT	4 U	106 D	40 U	NT	NT	NT	NT	NT	4 U	NT	NT	36.5 JD	40 U	NT	NT	NT	NT
Sulfate	250000	NT	NT	**397000** DE	**398000** J	136000 DE	10700	89100 D	66300 D	69600 D	NT	**643000** DE	67100 D	68300 D	72400 D	62700 D	6940	62200 D	69400 D	70500 D
Total Organic Carbon	~	NT	NT	4580	5190 U	5,520	NT	NT	NT	NT	NT	4120	6370	4960	5510	10800	NT	NT	NT	NT
General Chemistry (ppt)																				
Salinity	~	NT	NT	0.0000	0.00000 U	0.0000	NT	NT	NT	NT	NT	0.0000	0.0000	0.00000	0.00000	0.00000	NT	NT	NT	NT
Microbial Activity (cells/mL)																				
Dehalococcoides spp. (DHC)	~	NT	NT	0.6	9.1 U	0.5	NT	NT	NT	NT	NT	0.8	0.5	58.7	0.7	0.5	NT	NT	NT	NT
Field Parameters																				
pH (standard units)	~	7.23	6.6	7.03	6.81	6.8	6.7	6.84	7.44	6.47	NC	7.27	6.73	6.96	7.4	6.97	7.02	6.86	7.26	6.4
Temperature (°C)	~	8.96	17.5	13.91	18.70	13.83	16.68	19.08	15.58	17.06	NC	14.62	17.14	22.3	14.84	14.62	18.07	19.16	17.06	15.2
Specific Conductivity (mS/cm)	~	2.03	1.37	1.83	1.81	1.29	0.54	0.45	0.43	7.66	NC	7.62	6.60	.017	7.52	7	7.8	7.39	7.77	0.43
Dissolved Oxygen (mg/L)	~	13.9	3.72	0.00	0.66	2.37	4.79	0	2.45	1.57	NC	0.00	4.62	8.4	1.95	0.94	1.85	7.2	0	3.99
Redox Potential (mV)	~	89	104	135	58	136	139	126	151	159	NC	-17	4	42	102	67	89	105	76	162
Turbidity (NTU)	~	981	352	87	260	26.6	194	80	50.2	250	NC	800	289	167	200	134	640	138	249	0

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. µg/L = micrograms per liter
3. ppt = parts per trillion
4. cells/mL = cells per milliliter
5. mS/cm = milliSiemens per centimeter
6. mg/L = milligrams per liter
7. mV = millivolts
8. NTU = Nephelometric Turbidty Unit
9. Groundwater sample analysis results exceeding NYSDEC TOGS AWQS are highlighted and in bold.
10 NT = Sample not tested for constituent
11. ~ = No standard or guidance value
12. B = The analyte was detected above the reporting limit in the associated method blank.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
14. D = Concentrations of analyte was quantified from diluted analysis.
15. E = Concentrations of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
16. NC = Not collected. Poor groundwater recovery precluded collection of groundwater quality parameters prior to sample collection.

Table 3
Second Semi-Annual Groundwater Monitoring Results (Geochemical and Biological Parameters)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample Location	NYSDEC TOGS	MW12										MW13									
Sample ID	Standards and	MW12_112015	MW12_022316	MW12_052416	MW12_090916	MW12_122016	MW12_032917	MW12_071017	MW12_101017	MW12_042018	MW12_102518	MW13_112015	MW13_022316	MW13_052416	MW13_090816	MW13_122016	MW13_032917	MW13_071017	MW13_101017	MW13_042018	MW13_102518
Lab Sample ID	Guidance	15K0769-03	16B0761-03	16E1019-03	16I0330-01	16L0844-05	17C1105-01	17G0203-02	17J0456-06	18D0893-03	18J1263-06	15K0769-04	16B0761-05	16E1019-02	16I0285-05	16L0844-06	17C1105-02	17G0203-03	17J0456-05	18D0893-03	18J1263-05
Sample Date	Values - GA	11/20/2015	2/23/2016	5/24/2016	9/9/2016	12/20/2016	3/29/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018	11/20/2015	2/23/2016	5/24/2016	9/8/2016	12/20/2016	3/29/2017	7/10/2017	10/10/2017	4/20/2018	10/25/2018
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual
Methane, Ethane & Ethylene (µg/L)																					
Ethane	~	NT	10 U	10 U	250 U	2000 U	500 U	NT	NT	NT	NT	NT	10 U	17	10 U	500 U	500 U	NT	NT	NT	NT
Ethylene (Ethene)	~	NT	10 U	10 U	250 U	2000 U	500 U	NT	NT	NT	NT	NT	10 U	10 U	12	500 U	500 U	NT	NT	NT	NT
Methane	~	NT	69	6400	2800 D	38000 D	3900 D	NT	NT	NT	NT	NT	10 U	130	210	8600 D	3700 D	NT	NT	NT	NT
Total Metals (µg/L)																					
Antimony	3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Manganese	300	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Selenium	10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Sodium	20000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Dissolved Metals (µg/L)																					
Antimony	3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Selenium	10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Sodium	20000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Thallium	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Iron (µg/L)																					
Total	300	NT	**40100**	**76900**	**50900**	**43100**	**39700**	**37200**	**25700**	**23500**	**64400** J	NT	**7310**	**16900**	**18800**	**25500**	**23300**	**18200**	**15000**	**11100**	**10400** J
Dissolved	300	NT	**32500**	**19800**	205	**20100**	**468** U	**1390**	**2380**	22.2 U	**24400**	NT	**916**	**490**	**2700**	**3600**	143 U	22.2 U	22.2 U	35.3	278 U
General Chemistry (µg/L)																					
Alkalinity	~	NT	684000	880000	810000	770000	680000	NT	NT	NT	NT	NT	506000	656000	655000	650000	685000	NT	NT	NT	NT
Chloride	250000	NT	219000 D	**2450000** DE	**1660000** DE	**1370000** J	**830000** DE	NT	NT	NT	NT	NT	**746000** DE	**1080000** DE	**1020000** J	**1010000** J	**894000** DE	NT	NT	NT	NT
Nitrate	10000	NT	NT	50 U	277 D	NT	NT	NT	NT	NT	NT	NT	NT	50 U	209 U	NT	NT	NT	NT	NT	NT
Nitrite	1000	NT	4 U	NT	NT	36 U	4 U	NT	NT	NT	NT	NT	4 U	NT	NT	36.6 U	4 U	NT	NT	NT	NT
Sulfate	250000	NT	1000 U	1850	5710 D	50000 U	8930	1000 U	6410	16500 U	30000	NT	3860	1000 U	2000 U	2020 D	20000 U	1000 U	5000 U	21200 U	28800 D
Total Organic Carbon	~	NT	2740	NT	204000	84400 D	127000 D	NT	NT	NT	NT	NT	103000	NT	62900	13100 D	90700 D	NT	NT	NT	NT
General Chemistry (ppt)																					
Salinity	~	NT	0.0000	0.0000	0.00000	0.00000	0.0000001 U	NT	NT	NT	NT	NT	0.0000	0.0000	0.00000 U	0.00000 U	0.0000001 U	NT	NT	NT	NT
Microbial Activity (cells/mL)																					
Dehalococcoides spp. (DHC)	~	NT	14.3	80000	600	68100	455	NT	NT	NT	NT	NT	1380	705000	468000	3980000	174000	NT	NT	NT	NT
Field Parameters																					
pH (standard units)	~	6.41	6.72	6.37	6.56	6.87	6.73	6.85	6.79	7.53	6.41	7.32	7.51	6.58	6.55	7.06	NC	6.96	7.03	7.62	6.49
Temperature (°C)	~	20.50	13.24	15.82	20.45	14.34	12.55	15.4	17.22	14.55	15.55	19.67	12.7	17	20.78	14.00	NC	15.51	17.32	14.2	15.04
Specific Conductivity (mS/cm)	~	5.99	7.98	7.21	6.22	4.74	2.58	1.35	0.99	1.77	4.81	3.21	4.22	3.92	4.07	4.17	NC	3.88	3.26	2.69	0
Dissolved Oxygen (mg/L)	~	0.00	0.00	1.73	2.63	0.46	0.68	1.44	0	0	0	1.56	0.00	2.21	2.80	0.92	NC	4.9	0	8.09	0
Redox Potential (mV)	~	-86	-96	-92	-113	-124	-127	4	-68	-72	-25	-113	-180	-98	-91	-125	NC	2	-108	-74	-71
Turbidity (NTU)	~	129	48	23.1	65.6	87.1	134	80.2	70.1	85.5	205	20.0	50	5.0	37.0	315	NC	73	74.2	27.9	362

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. µg/L = micrograms per liter
3. ppt = parts per trillion
4. cells/mL = cells per milliliter
5. mS/cm = milliSiemens per centimeter
6. mg/L = milligrams per liter
7. mV = millivolts
8. NTU = Nephelometric Turbidty Unit
9. Groundwater sample analysis results exceeding NYSDEC TOGS AWQS are highlighted and in bold.
10 NT = Sample not tested for constituent
11. ~ = No standard or guidance value
12. B = The analyte was detected above the reporting limit in the associated method blank.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
14. D = Concentrations of analyte was quantified from diluted analysis.
15. E = Concentrations of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
16. NC = Not collected. Poor groundwater recovery precluded collection of groundwater quality parameters prior to sample collection.

Table 3
Second Semi-Annual Groundwater Monitoring Results (Geochemical and Biological Parameters)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample Location	NYSDEC TOGS	MW14										MW15									
Sample ID	**Standards and**	**MW14_112315**	**MW14_022416**	**MW14_052316**	**MW14_090816**	**MW14_122116**	**MW14_032917**	**MW14_071017**	**MW14_101017**	**MW14_042018**	**MW14_102518**	**MW15_112315**	**MW15_022416**	**MW15_052416**	**MW15_090916**	**MW15_122016**	**MW15_032917**	**MW15_071017**	**MW15_101017**	**MW15_042018**	**MW15_102518**
Lab Sample ID	**Guidance**	**15K0828-02**	**16B0816-01**	**16E0944-02**	**16I0285-04**	**16L0909-02**	**17C1105-03**	**17G0203-05**	**17J0456-03**	**18D0893-04**	**18J1263-04**	**15K0828-03**	**16B0816-02**	**16E1019-01**	**16I0330-02**	**16L0844-04**	**17C1105-04**	**17G0203-04**	**17J0456-04**	**18D0893-06**	**18J1263-07**
Sample Date	**Values - GA**	**11/23/2015**	**2/24/2016**	**5/23/2016**	**9/8/2016**	**12/21/2016**	**3/29/2017**	**7/10/2017**	**10/10/2017**	**4/20/2018**	**10/25/2018**	**11/23/2015**	**2/24/2016**	**5/24/2016**	**9/9/2016**	**12/20/2016**	**3/29/2017**	**7/10/2017**	**10/10/2017**	**4/20/2018**	**10/25/2018**
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8	1st Semi-Annual	2nd Semi-Annual
Methane, Ethane & Ethylene (µg/L)																					
Ethane	~	NT	10 U	10 U	10 U	10 U	10 U	NT	NT	NT	NT	NT	10 U	10 U	10 U	10 U	10 U	NT	NT	NT	NT
Ethylene (Ethene)	~	NT	10 U	10 U	10 U	10 U	10 U	NT	NT	NT	NT	NT	10 U	10 U	10 U	10 U	10 U	NT	NT	NT	NT
Methane	~	NT	10 U	10 U	10 U	10 U	10 U	NT	NT	NT	NT	NT	10 U	10 U	10 U	200	10 U	NT	NT	NT	NT
Total Metals (µg/L)																					
Antimony	3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Manganese	300	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Selenium	10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Sodium	20000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Dissolved Metals (µg/L)																					
Antimony	3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Selenium	10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Sodium	20000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Thallium	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Iron (µg/L)																					
Total	300	NT	**722**	**3320**	**4470**	**627**	2570 U	195	**466**	172	**309** J	NT	**3620**	**10600**	**2820**	**14200**	2940 U	**2310**	**1110**	**984**	**6170** J
Dissolved	300	NT	97.1	26.6	**438**	41.800	78 U	22.2 U	22.2 U	22.2 U	278 U	NT	22.2	54.6	41.9	104	98.6 U	22.2 U	22.2 U	22.2 U	**882**
General Chemistry (µg/L)																					
Alkalinity	~	NT	342000	376000	400000	380000	365000	NT	NT	NT	NT	NT	122000	136000	120000	110000	124000	NT	NT	NT	NT
Chloride	250000	NT	**317000** DE	**327000** DE	**315000** D	**348000** JD	248000	NT	NT	NT	NT	NT	69800 D	77900 D	61300 D	40400 D	43300	NT	NT	NT	NT
Nitrate	10000	NT	NT	6960 D	7440 D	NT	NT	NT	NT	NT	NT	NT	NT	9350	6020 D	NT	NT	NT	NT	NT	NT
Nitrite	1000	NT	4 U	NT	NT	36.200 JD	4 U	NT	NT	NT	NT	NT	4 U	NT	NT	36.8 U	4 U	NT	NT	NT	NT
Sulfate	250000	NT	**797000** DE	**820000** DE	**690000** J	59300 D	**485000** E	55300	**512000** J	**498000** J	73300 D	NT	187000 D	191000 D	201000 J	188000 J	132000 E	12100	106000 J	144000 J	178000
Total Organic Carbon	~	NT	2870	4620	3440 U	3910	4130 U	NT	NT	NT	NT	NT	1820	NT	4780	3640 U	4120 U	NT	NT	NT	NT
General Chemistry (ppt)																					
Salinity	~	NT	0.0000	0.0000	0.00000 U	0.00000 U	0.0000001 U	NT	NT	NT	NT	NT	0.0000	0.0000	0.00000 U	0.00000 U	0 U	NT	NT	NT	NT
Microbial Activity (cells/mL)																					
Dehalococcoides spp. (DHC)	~	NT	0.5	2.3	0.4 J	12.6	0.7	NT	NT	NT	NT	NT	1.1	1.3	0.5 U	3.2 U	0.5	NT	NT	NT	NT
Field Parameters																					
pH (standard units)	~	7.27	7.03	6.83	6.86	NC	NC	7.16	7.05	7.17	6.8	9.31	7.64	6.93	6.72	6.94	NC	6.88	7.05	7.85	6.77
Temperature (°C)	~	16.81	11.47	16.41	19.61	NC	NC	16.37	16.79	13.56	14.46	14.17	12.88	14.45	22.13	13.94	NC	14.37	16.53	13.47	15.51
Specific Conductivity (mS/cm)	~	2.36	.002	2.81	2.64	NC	NC	2.34	2.26	2.33	2.29	.393	.847	.94	.897	0	NC	0.41	0.39	0.44	0.49
Dissolved Oxygen (mg/L)	~	2.99	2.07	3.24	3.95	NC	NC	4.89	1.63	3.73	2.01	2.62	1.2	8.28	2.00	10.05	NC	4.9	0.71	2.72	2.95
Redox Potential (mV)	~	114	58	98	77	NC	NC	-8	172	217	227	57	76	195	144	26	NC	7	72	0.44	46
Turbidity (NTU)	~	130	200	743	34.7	NC	NC	30	40.2	45.6	142	>1000	420	1000	323	231	NC	508	872	237	159

Notes:
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6. mg/L = milligrams per liter
7. mV = millivolts
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11. ~ = No standard or guidance value
12. B = The analyte was detected above the reporting limit in the associated method blank.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
14. D = Concentrations of analyte was quantified from diluted analysis.
15. E = Concentrations of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
16. NC = Not collected. Poor groundwater recovery precluded collection of groundwater quality parameters prior to sample collection.

Table 3
Second Semi-Annual Groundwater Monitoring Results (Geochemical and Biological Parameters)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample Location	NYSDEC TOGS	MW16																			
Sample ID	Standards and	MW16_112015	DUP01_112015	MW16_022316	DUP01_022316	MW16_052316	DUP01_052316	MW16_090816	DUP01_090816	MW16_122016	DUP01_122016	MW16_032817	DUP01_032817	MW16_071017	DUP01_071017	MW16_101017	DUP01_101017	MW16_04202018	DUP01_042018	MW16_102518	DUP01_102518
Lab Sample ID	Guidance	15K0769-05	15K0769-06	16B0761-01	16B0761-02	16E0944-01	16E0944-04	16I0285-03	16I0285-06	16L0844-03	16L0844-07	17C1049-01	17C1049-04	17G0203-07	17G0203-08	17J0456-01	17J0456-08	18D0893-07	18D0893-08	18J1263-01	18J1263-08
Sample Date	Values - GA	11/20/2015	11/20/2015	2/23/2016	2/23/2016	5/23/2016	5/23/2016	9/8/2016	9/8/2016	12/20/2016	12/20/2016	3/28/2017	3/28/2017	7/10/2017	7/10/2017	10/10/2017	10/10/2017	4/20/2018	4/20/2018	10/25/2018	10/25/2018
		Quarter 1		Quarter 2		Quarter 3		Quarter 4		Quarter 5		Quarter 6		Quarter 7		Quarter 8		1st Semi-Annual		2nd Semi-Annual	
Methane, Ethane & Ethylene (µg/L)																					
Ethane	~	NT	NT	10 U	NT	10 U	NT	100 U	20 U	100 U	500 U	100 U	500 U	NT	NT	NT	NT	NT	NT	NT	NT
Ethylene (Ethene)	~	NT	NT	10 U	NT	10 U	NT	100 U	20 U	100 U	500 U	100 U	500 U	NT	NT	NT	NT	NT	NT	NT	NT
Methane	~	NT	NT	96	NT	990	NT	600 J	360 J	1000 J	7800 J	1600 D	3000 D	NT	NT	NT	NT	NT	NT	NT	NT
Total Metals (µg/L)																					
Antimony	3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Manganese	300	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Selenium	10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Sodium	20000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Dissolved Metals (µg/L)																					
Antimony	3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Selenium	10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Sodium	20000	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Thallium	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Iron (µg/L)																					
Total	300	NT	NT	**3720**	NT	**2180**	NT	**1940**	**2030**	**2200** J	**2940**	**4280**	**4610**	**6420** J	**5600**	**5750**	**5650**	**9120** J	**8850**	**6570** J	**6170** J
Dissolved	300	NT	NT	**2580**	NT	**412**	NT	22.2 U	221 U	**1040**	**1700**	**2350**	**1790**	**1500** J	**692** J	30	22.2 U	**837** J	**624**	**1370** J	**882** J
General Chemistry (µg/L)																					
Alkalinity	~	NT	NT	532000	NT	480000	NT	416000	414000	455000	470000	460000	450000	NT	NT	NT	NT	NT	NT	NT	NT
Chloride	250000	NT	NT	175000 D	NT	105000 D	NT	94700 D	96600 D	125000 D	124000 D	82400	82800 D	NT	NT	NT	NT	NT	NT	NT	NT
Nitrate	10000	NT	NT	NT	NT	2990 D	NT	5360 J	5860 D	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Nitrite	1000	NT	NT	491	NT	NT	NT	NT	NT	22 U	55 U	392	496 JD	NT	NT	NT	NT	NT	NT	NT	NT
Sulfate	250000	NT	NT	**426000** DE	NT	**254000** DE	NT	235000 J	243000 J	**304000** J	**305000** J	205000 E	**271000** DE	**400000** J	34700 J	186000 J	195000 J	**272000** J	**269000** J	187000 DE	178000 DE
Total Organic Carbon	~	NT	NT	24200	NT	16900	NT	3960 U	5070 J	5530 U	4490 U	5790	6030	NT	NT	NT	NT	NT	NT	NT	NT
General Chemistry (ppt)																					
Salinity	~	NT	NT	0.0000	NT	0.0000	NT	0.00000 U	0.00000 U	0.00000 U	0.00000 U	0.0000001 U	0.0000001 U	NT	NT	NT	NT	NT	NT	NT	NT
Microbial Activity (cells/mL)																					
Dehalococcoides spp. (DHC)	~	NT	NT	168	7.8	53	64.5	343	324	35.3	57.2	1.1	0.9	NT	NT	NT	NT	NT	NT	NT	NT
Field Parameters																					
pH (standard units)	~	6.67	6.67	7.73	7.73	6.72	6.72	6.59	6.59	6.94	6.94	6.95	6.95	6.76	6.76	6.83	6.83	7.49	7.49	6.76	6.76
Temperature (°C)	~	18.61	18.61	16.54	16.54	15.91	15.91	16.45	16.45	13.94	13.94	15.46	15.46	13.96	13.96	16.3	16.3	14.93	14.93	15.18	15.18
Specific Conductivity (mS/cm)	~	1.41	1.41	2.520	2.520	1.58	1.58	1.47	1.47	0	0	1.49	1.49	1.23	1.23	0.87	0.87	0.86	0.86	0.69	0.69
Dissolved Oxygen (mg/L)	~	1.99	1.99	0.00	0.00	1.28	1.28	2.1	2.1	10.05	10.05	0.86	0.86	1.23	1.23	0	0	0	0	0	0
Redox Potential (mV)	~	167	167	-109	-109	-144	-144	-52	-52	26	26	-123	-123	-75	-75	-60	-60	-85	-85	-53	-53
Turbidity (NTU)	~	0.0	0.0	22.9	22.9	0.0	0.0	0.0	0.0	231	231	3.34	3.34	3.6	3.6	4.5	4.5	1.3	1.3	1.5	1.5

Notes:
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2. µg/L = micrograms per liter
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12. B = The analyte was detected above the reporting limit in the associated method blank.
13. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
14. D = Concentrations of analyte was quantified from diluted analysis.
15. E = Concentrations of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
16. NC = Not collected. Poor groundwater recovery precluded collection of groundwater quality parameters prior to sample collection.

Table 4
Second Semi-Annual Groundwater Monitoring Results – QA/QC Samples (VOCs and Geochemical Parameters)
535 4th Avenue
Brooklyn, New York
Langan Project No. 170264501

Sample ID Lab Sample ID Sample Date Quarter	NYSDEC TOGS Standards and Guidance Values - GA	FB01_102518 18J1263-10 10/25/2018 Second Semi-Annual		TB01_102518 18J1263-09 10/25/2018 Second Semi-Annual	
Volatile Organic Compounds (VOCs) (µg/L)					
1,1,1-Trichloroethane	5	0.200	U	0.200	U
1,1-Dichloroethane	5	0.200	U	0.200	U
1,1-Dichloroethylene	5	0.200	U	0.200	U
1,2,4-Trimethylbenzene	5	0.200	U	0.200	U
1,2-Dichlorobenzene	3	0.200	U	0.200	U
1,2-Dichloroethane	0.6	0.200	U	0.200	U
1,3,5-Trimethylbenzene	5	0.200	U	0.200	U
1,3-Dichlorobenzene	3	0.200	U	0.200	U
1,4-Dichlorobenzene	3	0.200	U	0.200	U
1,4-Dioxane	~	40	UJ	40	UJ
2-Butanone	50	0.200	UJ	0.200	UJ
Acetone	50	1	U	1	U
Benzene	1	0.200	U	0.200	U
Carbon tetrachloride	5	0.200	U	0.200	U
Chlorobenzene	5	0.200	U	0.200	U
Chloroform	7	0.200	U	0.200	U
cis-1,2-Dichloroethylene	5	0.200	U	0.200	U
Ethyl Benzene	5	0.200	U	0.200	U
Methyl tert-butyl ether (MTBE)	10	0.200	U	0.200	U
Methylene chloride	5	1	U	1	U
Naphthalene	10	1	UJ	1	UJ
n-Butylbenzene	5	0.200	U	0.200	U
n-Propylbenzene	5	0.200	U	0.200	U
o-Xylene	5	0.200	U	0.200	U
p- & m- Xylenes	5	0.500	U	0.500	U
sec-Butylbenzene	5	0.200	U	0.200	U
tert-Butylbenzene	5	0.200	U	0.200	U
Tetrachloroethylene	5	0.200	UJ	0.200	UJ
Toluene	5	0.200	U	0.200	U
trans-1,2-Dichloroethylene	5	0.200	U	0.200	U
Trichloroethylene	5	0.200	U	0.200	U
Vinyl Chloride	2	0.200	U	0.200	U
Xylenes, Total	5	0.600	U	0.600	U
Iron (µg/L)					
Total	300	278.0	UJ	NT	
Dissolved	300	278	U	NT	
General Chemistry (µg/L)					
Sulfate	250,000	10,000	U	NT	

Notes:
1. Groundwater samples analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values.
2. QA/QC = Quality Assurance/ Quality Control
3. µg/L = micrograms per liter
4. NT = Sample not tested for constituent
5. J = The analyte was detected above the Method Detection Limit (MDL), but below the Reporting Limit (RL); therefore, the result is an estimated concentration.
6. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
7. ~ = No standard or guidance value for this constituent

ATTACHMENT A

Groundwater Sampling Forms

GROUND WATER SAMPLE FIELD INFORMATION FORM

Project:	535 4th Avenue	**Site Location:**	Brooklyn, NY	**Well No:**	MW05	**Well Depth (ft):**	42.10
Project Number:	170264501	**Pump Make/Model:**	Monsoon Pro	**Well Permit No.:**	N/A	**Well Diameter (in):**	2
Personnel:	Tess Reardon	**Weather:**	37-50, Clear	**Pump Intake Depth (ft):**	37.00	**Well Screen Interval:**	32.10-42.10
Water Quality Device Model	Horiba U52-2	**Background PID Reading:**	0.1	**Depth to Water Before Pump Installation (ft):**	30.78	**Sample No.:**	MW05_102518
Pine Number	21202	**PID Beneath Inner Cap:**	0.1	**Tubing Diameter:**	3/8" ID, 1/2"OD	**Sample Date:**	10/25/2018
						Sample Time:	15:55

STABILIZATION = 3 successive readings within limits

TIME	TEMP deg c (+/- 3%)	PH su (+/- 0.1)	ORP mv (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Q (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
	BEGIN PURGING										
13:20	16.24	6.51	172	7.21	206.0	2.68	38.62	1		Water brown; no	
13:25	17.06	6.47	159	7.66	250.00	1.57	39.70	1.5		sheen nor odor	
										Well purged dry	**N**

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.

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GROUND WATER SAMPLE FIELD INFORMATION FORM

Project:	535 4th Avenue	**Site Location:**	Brooklyn, NY	**Well No:**	MW07	**Well Depth (ft):**	39.80
Project Number:	170264501	**Pump Make/Model:**	Monsoon Pro	**Well Permit No.:**	N/A	**Well Diameter (in):**	2
Personnel:	Tess Reardon	**Weather:**	37-50, Clear	**Pump Intake Depth (ft):**	38.00	**Well Screen Interval:**	29.80-39.80
Water Quality Device Model	Horiba U52-2	**Background PID Reading:**	0.1	**Depth to Water Before Pump Installation (ft):**	28.36	**Sample No.:**	MW07__102518
Pine Number	21202	**PID Beneath Inner Cap:**	0.2	**Tubing Diameter:**	3/8" ID, 1/2"OD	**Sample Date:**	10/25/2018
						Sample Time:	16:05

STABILIZATION = 3 successive readings within limits

TIME	TEMP deg c (+/- 3%)	PH su (+/- 0.1)	ORP mv (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Q (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
	BEGIN PURGING										
1:40	15.92	6.65	141	0.42	0.0	4.27	34.71		1.25	Water brown; no sheen nor odor	
1:45	15.35	6.59	150	0.41	0.00	3.31	35.90		2.5		
1:50	15.20	6.40	162	0.43	0.00	3.99	41.70		4		**N**
										Well purged dry	**N**

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.

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GROUND WATER SAMPLE FIELD INFORMATION FORM

Project:	535 4th Avenue	**Site Location:**	Brooklyn, NY	**Well No:**	MW12	**Well Depth (ft):**	22.50
Project Number:	170264501	**Pump Make/Model:**	Monsoon Pro	**Well Permit No.:**	N/A	**Well Diameter (in):**	2
Personnel:	Tess Reardon	**Weather:**	37-50, Clear	**Pump Intake Depth (ft):**	20.00	**Well Screen Interval:**	12.50-22.50
Water Quality Device Model	Horiba U52-2	**Background PID Reading:**	0.1	**Depth to Water Before Pump Installation (ft):**	15.54	**Sample No.:**	MW12_102518
Pine Number	21202	**PID Beneath Inner Cap:**	0.3	**Tubing Diameter:**	3/8" ID, 1/2"OD	**Sample Date:**	10/25/2018
						Sample Time:	15:20

STABILIZATION = 3 successive readings within limits

TIME	TEMP deg c (+/- 3%)	PH su (+/- 0.1)	ORP mv (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Q (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
	BEGIN PURGING										
10:55	15.49	6.40	-23	4.81	309.0	0.98	20.49		0.5	Water black in color; vegetable oil-like odor	
11:00	15.55	6.41	-25	4.81	205.00	0.00	22.20		0.75		**N**
										Well purged dry	

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.

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GROUND WATER SAMPLE FIELD INFORMATION FORM

Project:	535 4th Avenue	**Site Location:**	Brooklyn, NY	**Well No:**	MW13	**Well Depth (ft):**	25.40
Project Number:	170264501	**Pump Make/Model:**	Monsoon Pro	**Well Permit No.:**	N/A	**Well Diameter (in):**	2
Personnel:	Tess Reardon	**Weather:**	37-50, Clear	**Pump Intake Depth (ft):**	23.00	**Well Screen Interval:**	15.40-25.40
Water Quality Device Model	Horiba U52-2	**Background PID Reading:**	0.1	**Depth to Water Before Pump Installation (ft):**	20.90	**Sample No.:**	MW13_102518
Pine Number	21202	**PID Beneath Inner Cap:**	0.6	**Tubing Diameter:**	3/8" ID, 1/2"OD	**Sample Date:**	10/25/2018
						Sample Time:	15:10

STABILIZATION = 3 successive readings within limits

TIME	TEMP deg c (+/- 3%)	PH su (+/- 0.1)	ORP mv (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Q (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
	BEGIN PURGING										
10:15	16.17	6.66	-57	2.57	579.0	0.00	24.50		0.25	Water dark gray,	
10:20	15.04	6.49	-71	0.00	362.00	0.00	25.10		0.5	vegetable oil-like	
10:25										**Well purged dry**	**N**

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.

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GROUND WATER SAMPLE FIELD INFORMATION FORM

Project:	535 4th Avenue	**Site Location:**	Brooklyn, NY	**Well No:**	MW14	**Well Depth (ft):**	24.60
Project Number:	170264501	**Pump Make/Model:**	Monsoon Pro	**Well Permit No.:**	N/A	**Well Diameter (in):**	2
Personnel:	Tess Reardon	**Weather:**	37-50, Clear	**Pump Intake Depth (ft):**	22.50	**Well Screen Interval:**	14.60-24.60
Water Quality Device Model	Horiba U52-2	**Background PID Reading:**	0.0	**Depth to Water Before Pump Installation (ft):**	18.64	**Sample No.:**	MW14_102518
Pine Number	21202	**PID Beneath Inner Cap:**	0.1	**Tubing Diameter:**	3/8" ID, 1/2"OD	**Sample Date:**	10/25/2018
						Sample Time:	14:45

STABILIZATION = 3 successive readings within limits

TIME	TEMP deg c (+/- 3%)	PH su (+/- 0.1)	ORP mv (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Q (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
	BEGIN PURGING										
8:30	14.14	6.66	267	2.36	104.0	1.59	21.90			Water clear; no sheen nor odor	
8:35	14.46	6.80	227	2.29	142.00	2.01	22.50				
8:40										**Well purged dry**	**N**

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.

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GROUND WATER SAMPLE FIELD INFORMATION FORM

Project:	535 4th Avenue	**Site Location:**	Brooklyn, NY	**Well No:**	MW15	**Well Depth (ft):**	22.20
Project Number:	170264501	**Pump Make/Model:**	Monsoon Pro	**Well Permit No.:**	N/A	**Well Diameter (in):**	2
Personnel:	Tess Reardon	**Weather:**	37-50, Clear	**Pump Intake Depth (ft):**	20.00	**Well Screen Interval:**	12.20-22.20
Water Quality Device Model	Horiba U52-2	**Background PID Reading:**	0.1	**Depth to Water Before Pump Installation (ft):**	15.72	**Sample No.:**	MW15_102518
Pine Number	21202	**PID Beneath Inner Cap:**	0.2	**Tubing Diameter:**	3/8" ID, 1/2"OD	**Sample Date:**	10/25/2018
						Sample Time:	15:35

STABILIZATION = 3 successive readings within limits

TIME	TEMP deg c (+/- 3%)	PH su (+/- 0.1)	ORP mv (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Q (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
	BEGIN PURGING										
11:25	15.27	6.92	-5	0.57	235.0	3.71	17.45		0.5	Water clear; no	
11:30	15.51	6.77	46	0.49	159.00	2.95	18.50		0.75	sheen nor odor	
11:35										**Well purged dry**	**N**

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.

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GROUND WATER SAMPLE FIELD INFORMATION FORM

Project:	535 4th Avenue	**Site Location:**	Brooklyn, NY	**Well No:**	MW16	**Well Depth (ft):**	25.30
Project Number:	170264501	**Pump Make/Model:**	Monsoon Pro	**Well Permit No.:**	N/A	**Well Diameter (in):**	2
Personnel:	Tess Reardon	**Weather:**	37-50, Clear	**Pump Intake Depth (ft):**	22.00	**Well Screen Interval:**	15.30-25.30
Water Quality Device Model	Horiba U52-2	**Background PID Reading:**	0.1	**Depth to Water Before Pump Installation (ft):**	18.60	**Sample No.:**	MW16_102518 (+MS/MSD) DUP01_102518
Pine Number	21202	**PID Beneath Inner Cap:**	0.1	**Tubing Diameter:**	3/8" ID, 1/2"OD	**Sample Date:**	10/25/2018
						Sample Time:	9:20

STABILIZATION = 3 successive readings within limits

TIME	TEMP deg c (+/- 3%)	PH su (+/- 0.1)	ORP mv (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Q (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
	BEGIN PURGING										
8:55	15.07	6.76	-30	0.64	62.7	0.02	19.65		1.25	Clear; no sheen; vegetable oil-like odor	
9:00	15.06	6.85	-47	0.65	3.50	0.00	20.70		3		
9:05	15.15	6.83	-52	0.67	1.80	0.00	19.62		4.5		**N**
9:10	15.17	6.79	-43	0.68	1.50	0.00	19.62		6.75		**N**
9:15	15.18	6.76	-53	0.69	1.50	0.00	19.67			Collect Sample	**Y**

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.

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ATTACHMENT B

Data Usability Summary Report

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Elizabeth Adkins, Langan Senior Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: November 16, 2018

Re: Data Usability Summary Report
For 535 4th Avenue
Samples Collected on October 25, 2018
Langan Project No.: 170264501

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of samples collected in October 2018 by Langan Engineering and Environmental Services ("Langan") at the 535 4th Avenue site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAC registration # 10854 and 12058) for volatile organic compounds (VOCs), total and dissolved iron (Fe), and sulfate by the methods specified below.

- VOCs by SW-846 Method 8260C
- Fe by SW-846 Method 6010D
- Sulfate by USEPA Method 300.0

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
18J1263	18J1263-01	MW16_102518	10/25/2018	VOCs, Fe, Sulfate
18J1263	18J1263-02	MW5_102518	10/25/2018	VOCs, Fe, Sulfate
18J1263	18J1263-03	MW7_102518	10/25/2018	VOCs, Fe, Sulfate
18J1263	18J1263-04	MW14_102518	10/25/2018	VOCs, Fe, Sulfate
18J1263	18J1263-05	MW13_102518	10/25/2018	VOCs, Fe, Sulfate
18J1263	18J1263-06	MW12_102518	10/25/2018	VOCs, Fe, Sulfate
18J1263	18J1263-07	MW15_102518	10/25/2018	VOCs, Fe, Sulfate
18J1263	18J1263-08	DUP01_102518	10/25/2018	VOCs, Fe, Sulfate
18J1263	18J1263-09	TB01_102518	10/25/2018	VOCs

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
18J1263	18J1263-10	FB01_102518	10/25/2018	VOCs, Fe, Sulfate

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-3a, "ICP-AES Data Validation" (September 2016, Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017), USEPA "National Functional Guidelines for Inorganic Superfund Methods Data Review" (EPA-540-R-2017-001, January 2017) and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, sample extraction and digestion, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, serial dilutions, dual column performance, field duplicate, and field blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

- **R –** The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
- **J –** The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
- **UJ –** The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.
- **U –** The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

NJ – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
DUP01_102518	8260C	123-91-1	1,4-DIOXANE	UJ
DUP01_102518	8260C	67-64-1	ACETONE	UJ
DUP01_102518	6010B	7439-89-6	IRON, DISSOLVED	J
DUP01_102518	6010B	7439-89-6	IRON, TOTAL	J
DUP01_102518	8260C	78-93-3	2-BUTANONE	UJ
DUP01_102518	8260C	91-20-3	NAPHTHALENE	UJ
DUP01_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
FB01_102518	8260C	123-91-1	1,4-DIOXANE	UJ
FB01_102518	6010B	7439-89-6	IRON, TOTAL	UJ
FB01_102518	8260C	78-93-3	2-BUTANONE	UJ
FB01_102518	8260C	91-20-3	NAPHTHALENE	UJ
FB01_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ
MW12_102518	8260C	123-91-1	1,4-DIOXANE	UJ
MW12_102518	8260C	67-64-1	ACETONE	J
MW12_102518	6010B	7439-89-6	IRON, TOTAL	J
MW12_102518	8260C	78-93-3	2-BUTANONE	UJ
MW12_102518	8260C	91-20-3	NAPHTHALENE	UJ
MW12_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
MW13_102518	8260C	123-91-1	1,4-DIOXANE	UJ
MW13_102518	8260C	67-64-1	ACETONE	J
MW13_102518	6010B	7439-89-6	IRON, TOTAL	J
MW13_102518	8260C	78-93-3	2-BUTANONE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW13_102518	8260C	91-20-3	NAPHTHALENE	UJ
MW13_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
MW14_102518	8260C	123-91-1	1,4-DIOXANE	UJ
MW14_102518	8260C	67-64-1	ACETONE	UJ
MW14_102518	8260C	7439-89-6	IRON, TOTAL	J
MW14_102518	8260C	78-93-3	2-BUTANONE	UJ
MW14_102518	8260C	91-20-3	NAPHTHALENE	UJ
MW14_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
MW15_102518	8260C	123-91-1	1,4-DIOXANE	UJ
MW15_102518	8260C	67-64-1	ACETONE	UJ
MW15_102518	6010B	7439-89-6	IRON, TOTAL	J
MW15_102518	8260C	78-93-3	2-BUTANONE	UJ
MW15_102518	8260C	91-20-3	NAPHTHALENE	UJ
MW15_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
MW16_102518	8260C	123-91-1	1,4-DIOXANE	UJ
MW16_102518	8260C	67-64-1	ACETONE	UJ
MW16_102518	6010B	7439-89-6	IRON, DISSOLVED	J
MW16_102518	6010B	7439-89-6	IRON, TOTAL	J
MW16_102518	8260C	78-93-3	2-BUTANONE	UJ
MW16_102518	8260C	91-20-3	NAPHTHALENE	UJ
MW16_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
MW5_102518	8260C	123-91-1	1,4-DIOXANE	UJ
MW5_102518	8260C	67-64-1	ACETONE	UJ
MW5_102518	6010B	7439-89-6	IRON, TOTAL	J
MW5_102518	8260C	78-93-3	2-BUTANONE	UJ
MW5_102518	8260C	91-20-3	NAPHTHALENE	UJ
MW5_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
MW7_102518	8260C	123-91-1	1,4-DIOXANE	UJ
MW7_102518	8260C	67-64-1	ACETONE	UJ
MW7_102518	6010B	7439-89-6	IRON, TOTAL	J
MW7_102518	8260C	78-93-3	2-BUTANONE	UJ
MW7_102518	8260C	91-20-3	NAPHTHALENE	UJ

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
MW7_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	J
TB01_102518	8260C	123-91-1	1,4-DIOXANE	UJ
TB01_102518	8260C	78-93-3	2-BUTANONE	UJ
TB01_102518	8260C	91-20-3	NAPHTHALENE	UJ
TB01_102518	8260C	127-18-4	TETRACHLOROETHYLENE(PCE)	UJ

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. The section below describes the minor deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The laboratory control sample and duplicate (LCS/LCSD) for batch BJ81730 exhibited a percent recovery below the lower control limit (LCL) for tetrachloroethylene (PCE) (78.7%, 76.1%). The associated results in samples MW16_102518, MW5_102518, MW7_102518, MW14_102518, MW13_102518, MW12_102518, MW15_102518, and DUP01_102518 are qualified as "J" based on potential low bias.

The LCS/LCSD for batch BJ81730 exhibited a relative percent difference (RPD) above the control limit for 1,4-dioxane (33.6%). The associated results in samples MW16_102518, MW5_102518, MW7_102518, MW14_102518, MW13_102518, MW12_102518, MW15_102518, and DUP01_102518 are qualified as "UJ" based on potential indeterminate bias.

The LCS/LCSD for batch BK80021 exhibited a percent recovery below the LCL for tetrachloroethylene (PCE) (78.3%, 76.2%). The associated results in samples TB01_102518 and FB01_102518 are qualified as "UJ" based on potential low bias.

The initial calibration for instrument MSVOA7 exhibited a relative standard deviation above the control limit for 1,4-dioxane (33.0). The associated results in samples TB01_102518 and FB01_102518 are qualified as "UJ" based on potential indeterminate bias.

The continuing calibration verification (CCV) for batch BJ81730 on instrument MSVOA7 exhibited a percent difference (%D) above the control limit for acetone (31.3%), 2-butanone (49.6%), and naphthalene (-20.2%). The associated results in samples MW16_102518, MW5_102518, MW7_102518, MW14_102518, MW13_102518, MW12_102518, MW15_102518, and DUP01_102518 are qualified as "J" or "UJ" based on potential indeterminate bias.

The CCV for batch BK80021 on instrument MSVOA7 exhibited a %D above the control limit for 2-butanone (22.7%) and naphthalene (-25.7%). The associated results in samples TB01_102518 and FB01_102518 are qualified as "UJ" based on potential indeterminate bias.

Fe by SW-846 Method 6010D:

The field duplicate (DUP01_102518) and parent sample (MW16_102518) exhibited an absolute difference greater than the reporting limit for dissolved iron (0.488 mg/L). The associated results in sample DUP01_102518 and MW16_102518 are qualified as "J" based on potential indeterminate bias.

The serial dilution for batch BJ81698 exhibited a %D above the control limit for total iron (24.6%). The associated results in samples MW16_102518, MW5_102518, MW7_102518, MW14_102518, MW13_102518, MW12_102518, MW15_102518, DUP01_102518, and FB01_102518 are qualified as “J” or “UJ” based on potential indeterminate bias.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

Sulfate by USEPA Method 300.0:

The matrix spike for batch BJ81780 exhibited a percent recovery below the LCL for sulfate (7.75%). The concentration in sample MW16_102518 is greater than 4X the spiked amount. No qualification is necessary.

COMMENTS:

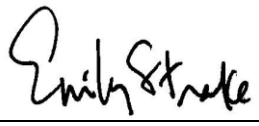
Field duplicate and parent sample pairs were collected and analyzed for all parameters. For results less than 5X the RL, analytes meet the precision criteria if the absolute difference is less than ±1X the RL. For results greater than 5X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30% for groundwater. The following analytes did not meet the precision criteria:

- DUP01_102518 and MW16_102518: Dissolved iron

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:



Emily Strake, CEP
Senior Project Chemist

ATTACHMENT C

Laboratory Analytical Reports, Chain-of-Custody, and Certification

Table of Contents for York SDG 18J1263

18J1263 QA Summary Report . . . 1
Introduction and Sample Cross Reference . . . 2
General Notes Relating to this Report . . . 3
Sample Results . . . 4
MW16_102518 . . . 4
Volatile Organic Compounds by GC/MS . . . 4
Metals by ICP . . . 5
Anions by Ion Chromatography . . . 5
MW5_102518 . . . 6
Volatile Organic Compounds by GC/MS . . . 6
Metals by ICP . . . 7
Anions by Ion Chromatography . . . 8
MW7_102518 . . . 8
Volatile Organic Compounds by GC/MS . . . 8
Metals by ICP . . . 9
Metals by ICP . . . 10
Anions by Ion Chromatography . . . 10
MW14_102518 . . . 10
Volatile Organic Compounds by GC/MS . . . 10
Metals by ICP . . . 12
Anions by Ion Chromatography . . . 12
MW13_102518 . . . 12
Volatile Organic Compounds by GC/MS . . . 12
MW13_102518 . . . 13
Volatile Organic Compounds by GC/MS . . . 13
Metals by ICP . . . 14
Anions by Ion Chromatography . . . 14
MW12_102518 . . . 15
Volatile Organic Compounds by GC/MS . . . 15
Metals by ICP . . . 16
Anions by Ion Chromatography . . . 17
MW15_102518 . . . 17
Volatile Organic Compounds by GC/MS . . . 17
Metals by ICP . . . 19
Anions by Ion Chromatography . . . 19

DUP01_102518 . . . 19
Volatile Organic Compounds by GC/MS . . . 19
Metals by ICP . . . 21
Anions by Ion Chromatography . . . 21
TB01_102518 . . . 21
Volatile Organic Compounds by GC/MS . . . 21
TB01_102518 . . . 22
Volatile Organic Compounds by GC/MS . . . 22
FB01_102518 . . . 23
Metals by ICP . . . 25
Anions by Ion Chromatography . . . 25
Case Narrative . . . 26
Quality Batch Summary . . . 32
QA/QC Summary Data . . . 34
Volatile Organic Compounds by GC/MS EPA 8260C . . . 34
Metals by ICP EPA 6010D . . . 42
Anions by Ion Chromatography EPA 300.0 . . . 43
Chains of Custody . . . 47
18J1263 Data Package . . . 51
18J1263 VOA Data . . . 51
VOA QC Summary . . . 53
Surrogate Summary Seq: Y8K0116 . . . 54
Surrogate Summary Seq: Y8K0121 . . . 56
Matrix Spike Results - Batch: BJ81730 . . . 57
Blank Spike Results - Batch: BJ81730 . . . 61
Blank Spike Results - Batch: BK80021 . . . 65
Batch Summary - Batch: BJ81730 . . . 69
Batch Summary - Batch: BK80021 . . . 70
Blank Results - Batch: BJ81730 . . . 71
Blank Results - Batch: BK80021 . . . 73
Mass Spec Tune - Seq: Y8I1906 . . . 75
Mass Spec Tune - Seq: Y8K0116 . . . 76
Mass Spec Tune - Seq: Y8K0121 . . . 77
Sequence Summary - Seq: Y8I1906 . . . 78
Sequence Summary - Seq: Y8K0116 . . . 79
Sequence Summary - Seq: Y8K0121 . . . 80
Internal Std. Summary Seq: Y8I1906 . . . 81
Internal Std. Summary Seq: Y8K0116 . . . 83

Internal Std. Summary Seq: Y8K0121 . . . 85
Hold Time Summary . . . 86
Reporting Limits Summary . . . 87
VOA Sample Data . . . 88
Sample Results and Raw Data . . . 89
MW16_102518 . . . 89
MW5_102518 . . . 99
MW7_102518 . . . 107
MW14_102518 . . . 116
MW13_102518 . . . 126
MW12_102518 . . . 137
MW15_102518 . . . 147
DUP01_102518 . . . 155
TB01_102518 . . . 164
FB01_102518 . . . 171
VOA Standards Data . . . 179
Initial Calibration - Cal: YI80021 . . . 180
Initial Calibration Raw Data - Cal: YI80021 . . . 189
Initial Calibration Check - Cal: YI80021 . . . 216
Continuing Calibration Check - Seq: Y8K0116 . . . 221
Continuing Calibration Check - Seq: Y8K0121 . . . 226
VOA Raw QC Data . . . 231
Mass Spec Tune Raw Data - Seq: Y8I1906 . . . 232
Mass Spec Tune Raw Data - Seq: Y8K0116 . . . 233
Mass Spec Tune Raw Data - Seq: Y8K0121 . . . 234
Blank Raw Data - Batch: BJ81730 . . . 235
Blank Raw Data - Batch: BK80021 . . . 244
Matrix Spike Raw Data - Batch: BJ81730 . . . 252
Blank Spike Raw Data - Batch: BJ81730 . . . 259
Blank Spike Raw Data - Batch: BK80021 . . . 266
Preparation Benchsheets - Batch: BJ81730 . . . 273
Preparation Benchsheets - Batch: BK80021 . . . 275
18J1263 Total and Dissolved Metals Data . . . 277
METALS QC Summary . . . 279
Matrix Spike Results - Batch: BJ81616 . . . 280
Matrix Spike Results - Batch: BJ81698 . . . 281
Duplicate Results - Batch: BJ81616 . . . 282
Duplicate Results - Batch: BJ81698 . . . 283

Blank Spike Results - Batch: BJ81616 284
Blank Spike Results - Batch: BJ81698 285
Serial Dilution - Seq: Y8J3107 286
Serial Dilution - Seq: Y8K0102 287
Batch Summary - Batch: BJ81616 288
Batch Summary - Batch: BJ81698 289
Blank Results - Seq: Y8J3107 290
Blank Results - Seq: Y8K0102 291
Sequence Summary - Seq: Y8J3107 292
Sequence Summary - Seq: Y8K0102 293
Hold Time Summary 294
Reporting Limits Summary 295
METALS Sample Data 296
Sample Results 297
MW16_102518 297
MW5_102518 298
MW7_102518 299
MW14_102518 300
MW13_102518 301
MW12_102518 302
MW15_102518 303
DUP01_102518 304
FB01_102518 305
METALS Standards Data 306
Initial and Continuing Calibration Check - Seq: Y8J3107 307
Initial and Continuing Calibration Check - Seq: Y8K0102 308
CRDL Standard - Seq: Y8J3107 309
CRDL Standard - Seq: Y8K0102 310
Interference Check Standard - Seq: Y8J3107 311
Interference Check Standard - Seq: Y8K0102 312
METALS Raw QC Data 313
Instrument Linear Range 314
Interelement Correction Factors 315
Preparation Benchsheets - Batch: BJ81616 317
Preparation Benchsheets - Batch: BJ81698 319
METALS Raw Sample Data 321
18J1263 IC Data 383
Sample Results 385

MW16_102518 385
MW5_102518 387
MW7_102518 389
MW14_102518 391
MW13_102518 393
MW12_102518 395
MW15_102518 397
DUP01_102518 399
FB01_102518 401
Blank Spike Results - Batch: BJ81780 440
Blank Spike Results - Batch: BK80076 442
Matrix Spike Results - Batch: BJ81780 444
Duplicate Results - Batch: BJ81780 446
Blank Results - Batch: BJ81780 448
Blank Results - Batch: BK80076 450
Batch Summary - Batch: BJ81780 452
Batch Summary - Batch: BK80076 453
Preparation Benchsheets - Batch: BJ81780 454
Preparation Benchsheets - Batch: BK80076 457
Calibration Curve Data 460
Hold Time Summary 461
Reporting Limits Summary 462

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Brian Gochenaur

Report Date: 11/05/2018
Client Project ID: 170264501
York Project (SDG) No.: 18J1263

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 ■ 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 11/05/2018
Client Project ID: 170264501
York Project (SDG) No.: 18J1263

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Brian Gochenaur

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on October 25, 2018 and listed below. The project was identified as your project: **170264501**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
18J1263-01	MW16_102518	Water	10/25/2018	10/25/2018
18J1263-02	MW5_102518	Water	10/25/2018	10/25/2018
18J1263-03	MW7_102518	Water	10/25/2018	10/25/2018
18J1263-04	MW14_102518	Water	10/25/2018	10/25/2018
18J1263-05	MW13_102518	Water	10/25/2018	10/25/2018
18J1263-06	MW12_102518	Water	10/25/2018	10/25/2018
18J1263-07	MW15_102518	Water	10/25/2018	10/25/2018
18J1263-08	DUP01_102518	Water	10/25/2018	10/25/2018
18J1263-09	TB01_102518	Water	10/25/2018	10/25/2018
18J1263-10	FB01_102518	Water	10/25/2018	10/25/2018

General Notes for York Project (SDG) No.: 18J1263

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 11/05/2018

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: MW16_102518 **York Sample ID:** 18J1263-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 9:20 am	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	Acetone	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	**cis-1,2-Dichloroethylene**	**14.8**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: MW16_102518 **York Sample ID:** 18J1263-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 9:20 am	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**7.96**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	**Trichloroethylene**	**2.30**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	**Vinyl Chloride**	**3.56**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	10/31/2018 07:30	10/31/2018 16:06	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*107 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*94.8 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*101 %*	*79-122*

Iron by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**6.57**		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:08	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**1.37**		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 17:41	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sulfate as SO4

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**187**		mg/L	10.0	10	EPA 300.0	10/31/2018 06:30	10/31/2018 06:30	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: MW16_102518 **York Sample ID:** 18J1263-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 9:20 am	10/25/2018

Sample Information

Client Sample ID: MW5_102518 **York Sample ID:** 18J1263-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:55 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	Acetone	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	**Chloroform**	**0.270**	J	ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: MW5_102518 **York Sample ID:** 18J1263-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:55 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**7.29**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:13	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*108 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*95.4 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*101 %*	*79-122*

Iron by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**3.41**		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:15	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	Iron	ND		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 17:48	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sample Information

Client Sample ID: MW5_102518 **York Sample ID:** 18J1263-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:55 pm	10/25/2018

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**69.6**		mg/L	10.0	10	EPA 300.0	10/31/2018 08:16	10/31/2018 08:16	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: MW7_102518 **York Sample ID:** 18J1263-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 4:05 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	Acetone	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: MW7_102518 **York Sample ID:** 18J1263-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 4:05 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-66-3	**Chloroform**	**0.270**	J	ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**23.3**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	**Trichloroethylene**	**0.490**	J	ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	10/31/2018 07:30	10/31/2018 18:45	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*113 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*94.1 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*101 %*	*79-122*

Iron by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: MW7_102518 **York Sample ID:** 18J1263-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 4:05 pm	10/25/2018

Iron by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**2.90**		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:18	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	Iron	ND		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 17:51	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**70.5**		mg/L	10.0	10	EPA 300.0	10/31/2018 08:34	10/31/2018 08:34	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: MW14_102518 **York Sample ID:** 18J1263-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 2:45 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: MW14_102518 **York Sample ID:** 18J1263-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 2:45 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	Acetone	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	**Chloroform**	**0.220**	J	ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	**cis-1,2-Dichloroethylene**	**43.1**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	**Methyl tert-butyl ether (MTBE)**	**0.740**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**53.3**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	**trans-1,2-Dichloroethylene**	**0.310**	J	ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	**Trichloroethylene**	**11.4**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: MW14_102518 **York Sample ID:** 18J1263-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 2:45 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-01-4	Vinyl Chloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:16	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*108 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.1 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*99.5 %*	*79-122*

Iron by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**0.309**		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:25	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	Iron	ND		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 17:54	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**73.3**		mg/L	50.0	50	EPA 300.0	11/01/2018 09:59	11/01/2018 09:59	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: MW13_102518 **York Sample ID:** 18J1263-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:10 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: MW13_102518 **York Sample ID:** 18J1263-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:10 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	**Acetone**	**4.72**	CCV-E, SCAL-E	ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	**cis-1,2-Dichloroethylene**	**4.22**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: MW13_102518 **York Sample ID:** 18J1263-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:10 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**2.48**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	**trans-1,2-Dichloroethylene**	**0.200**	J	ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	**Trichloroethylene**	**1.78**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	**Vinyl Chloride**	**7.55**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	10/31/2018 07:30	10/31/2018 19:48	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*110 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*95.9 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*97.4 %*	*79-122*

Iron by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**10.4**		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:28	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	Iron	ND		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 17:56	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**28.8**		mg/L	10.0	10	EPA 300.0	10/31/2018 09:46	10/31/2018 09:46	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: **MW13_102518** **York Sample ID:** **18J1263-05**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:10 pm	10/25/2018

Sample Information

Client Sample ID: **MW12_102518** **York Sample ID:** **18J1263-06**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:20 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	**Acetone**	**2.91**	CCV-E, SCAL-E	ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	**cis-1,2-Dichloroethylene**	**1.16**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: MW12_102518 **York Sample ID:** 18J1263-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:20 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**3.82**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-88-3	**Toluene**	**0.300**	J	ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	**Trichloroethylene**	**1.50**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	**Vinyl Chloride**	**1.14**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:19	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*106 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.5 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*101 %*	*79-122*

Iron by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**64.4**		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:31	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst

Sample Information

Client Sample ID: MW12_102518 **York Sample ID:** 18J1263-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:20 pm	10/25/2018

Iron, Dissolved by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**24.4**		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 17:59	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sulfate as SO4

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**30.0**		mg/L	10.0	10	EPA 300.0	10/31/2018 10:04	10/31/2018 10:04	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: MW15_102518 **York Sample ID:** 18J1263-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:35 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: MW15_102518 **York Sample ID:** 18J1263-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:35 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	**Chloroform**	**0.560**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**8.29**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	10/31/2018 07:30	10/31/2018 20:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*108 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*95.0 %*	*81-117*

Sample Information

Client Sample ID: MW15_102518 **York Sample ID:** 18J1263-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 3:35 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*102 %*			*79-122*						

Iron by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**1.46**		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:33	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	Iron	ND		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 18:06	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**90.6**		mg/L	10.0	10	EPA 300.0	10/31/2018 10:22	10/31/2018 10:22	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: DUP01_102518 **York Sample ID:** 18J1263-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 12:00 am	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: DUP01_102518 **York Sample ID:** 18J1263-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 12:00 am	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	Acetone	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	**cis-1,2-Dichloroethylene**	**14.6**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	**Tetrachloroethylene**	**7.81**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: DUP01_102518 **York Sample ID:** 18J1263-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 12:00 am	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	**Trichloroethylene**	**2.25**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	**Vinyl Chloride**	**3.52**		ug/L	0.200	0.500	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	10/31/2018 07:30	10/31/2018 21:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*110 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*95.4 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*101 %*	*79-122*

Iron by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**6.17**		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:35	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	**Iron**	**0.882**		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 18:09	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	**Sulfate**	**178**		mg/L	10.0	10	EPA 300.0	10/31/2018 10:40	10/31/2018 10:40	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Sample Information

Client Sample ID: TB01_102518 **York Sample ID:** 18J1263-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 4:20 pm	10/25/2018

Sample Information

Client Sample ID: TB01_102518 **York Sample ID:** 18J1263-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 4:20 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	Acetone	ND		ug/L	1.00	2.00	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: TB01_102518 **York Sample ID:** 18J1263-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 4:20 pm	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	Tetrachloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	11/01/2018 07:30	11/01/2018 12:51	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*108 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*95.5 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*98.6 %*	*79-122*

Sample Information

Client Sample ID: FB01_102518 **York Sample ID:** 18J1263-10

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 7:15 am	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: FB01_102518 **York Sample ID:** 18J1263-10

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 7:15 am	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
123-91-1	1,4-Dioxane	ND		ug/L	40.0	80.0	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
78-93-3	2-Butanone	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-64-1	Acetone	ND		ug/L	1.00	2.00	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
108-90-7	Chlorobenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
67-66-3	Chloroform	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-09-2	Methylene chloride	ND		ug/L	1.00	2.00	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
127-18-4	Tetrachloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			

Sample Information

Client Sample ID: FB01_102518 **York Sample ID:** 18J1263-10

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
18J1263	170264501	Water	October 25, 2018 7:15 am	10/25/2018

Volatile Organics, NYSDEC Part 375 List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
79-01-6	Trichloroethylene	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
75-01-4	Vinyl Chloride	ND		ug/L	0.200	0.500	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	11/01/2018 07:30	11/01/2018 13:23	SS
							Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*110 %*	*69-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*94.4 %*	*81-117*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*97.9 %*	*79-122*

Iron by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	Iron	ND		mg/L	0.278	1	EPA 6010D	10/30/2018 16:02	10/31/2018 16:38	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Iron, Dissolved by EPA 6010

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3015A

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-89-6	Iron	ND		mg/L	0.278	1	EPA 6010D	10/29/2018 15:01	10/30/2018 18:11	KML
						Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sulfate as SO4

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14808-79-8	Sulfate	ND		mg/L	10.0	10	EPA 300.0	10/31/2018 10:58	10/31/2018 10:58	TJM
						Certifications:	NELAC-NY10854,CTDOH,NJDEP,PADEP			

Case Narrative

Client: Langan Engineering & Environmental Services (NYC)
Client Project ID: 170264501
Prepared for: Brian Gochenaur

Introduction

This Case Narrative applies only to the samples submitted to our laboratory on **10/25/2018 20:09** as detailed on the chain-of-custody form.

The 10 sample(s) were received intact in a custody-sealed cooler unless otherwise noted. Upon receipt, cooler temperature(s) was determined using a NIST traceable digital infrared thermometer. The cooler temperature was acceptable (≤ 6°C) and documented as:

Cooler	Temp C°
Default Cooler	**4.4**

Chain-of-custody was maintained from receipt through analysis in the laboratory.

Methodology

All preparation and analyses were conducted according to the appropriate EPA methods detailed in the report.

Sample and Analysis Qualifiers

Sample Name	Matrix
DUP01_102518	Water
FB01_102518	Water
MW12_102518	Water
MW13_102518	Water
MW14_102518	Water
MW15_102518	Water
MW16_102518	Water
MW5_102518	Water
MW7_102518	Water
TB01_102518	Water

QC Sample Non-Conformances

Any QC sample non-conformances (CCV, LCS, DUP, MS) are detailed in the data package and in the attached tables.

No other problems were encountered during analysis.

York Project/SDG no.: 18J1263 Statement

We certify that these data are in compliance with SOP requirements both technically and for completeness for other than the conditions stated above. Release of the data contained in the hard copy report and any electronic deliverables has been authorized by the Laboratory Manager as verified by the signature on this laboratory report.

Approved by: *Ben Gulizia*
Laboratory Director

Date: 11/5/2018

York Analytical Laboratories, Inc.

Formulae Used for Sample Calculations

VOLATILE ORGANICS

1. Volatiles in Air-ppbv

Cx (ppbv) = Compound concentration, ppbv (parts per billion by volume)

$$Cx = \frac{(Ax)(Cis)(DF)}{(Ais)(RRF)}$$

2. Volatiles in Air-ug/m³

Cx (ug/m³)= Compound concentration in ug/m³

$$Cx\ (ug/m^3) = \frac{(ppbv \times Molecular\ wt.)}{(24.040)}$$

3. Volatile Organics (water and soil), ug/L or ug/kg

Soils/Waters

$$Cx = \frac{(Ax)(IS)(DF)}{(Ais)(RRF)(V)(\%\ solids)}$$

Medium Level Soils

$$Cx = \frac{(Ax)(IS)(VT)(1000)(DF)}{(Ais)(RRF)(VA)(V)(\%\ solids)}$$

4. Semi-Volatiles (waters and soils)

$$Cx = \frac{(Ax)(IS)(VE)(DF)}{(Ais)(RRF)(Volume\ injected,\ uL)(V)(\%\ solids)}$$

5. Pesticides/PCB (waters and soils), DRO, CTETPH

$$Cx = \frac{(Ax)(VE)(DF)}{(CF)(Volume\ injected,\ uL)(V)(\%\ solids)}$$

WHERE:

Cx = concentration of analyte as ug/L or ug/kg
Ax = Area of the characteristic ion for the compound to be measured, counts.

Ais = Area of the characteristic ion for the specific internal standard, counts.
IS = Concentration of the internal standard spiking mixture, ng
RRF = Mean relative response factor from the initial calibration.
DF = Dilution factor calculated as described in section 2. If no dilution is performed, DF= 1
V = Volume for liquids in mL, weight for soils/solids in grams.
VA = volume of MeOH aliquot for medium level soils
VE = final volume of concentrated extract
VT = volume of MeOH for volatiles medium level soils
CF = calibration factor for external calibration used in GC pest/pcb
Cis = Concentration of the internal standard spiking mixture, ppbv

Case Narrative Non-Conformance Summary

Laboratory:	York Analytical Laboratories, Inc.	Client:	Langan Engineering & Environmental Services (
Project:	170264501	Lab Project No:	18J1263
Laboratory Sample ID(s):	18J1263-01 - 18J1263-10	Sampling Date(s):	10/25/2018 - 10/25/2018
Review Date(s):	11/05/2018 - 11/05/2018	Laboratory Reviewer(s):	JD

QC Sample Nonconformances

Batch ID: BJ81730 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
BJ81730-BS1	Tetrachloroethylene - 127-18-4	7.87 ug/L	LCS	78.7	82-131	Low Bias				
BJ81730-BSD1	1,4-Dioxane - 123-91-1	386 ug/L	LCS Dup	184	10-349		33.6	30	Non-dir.	
BJ81730-BSD1	Tetrachloroethylene - 127-18-4	7.61 ug/L	LCS Dup	76.1	82-131	Low Bias	3.36	30		
BJ81730-MSD1	Tetrachloroethylene - 127-18-4	14.3 ug/L	Matrix Spike Dup (MW16_102518)	63.5	64-139	Low Bias	1.18	30		

Batch ID: BK80021 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
BK80021-BS1	Tetrachloroethylene - 127-18-4	7.83 ug/L	LCS	78.3	82-131	Low Bias				
BK80021-BSD1	Tetrachloroethylene - 127-18-4	7.62 ug/L	LCS Dup	76.2	82-131	Low Bias	2.72	30		

Batch ID: Y8K0116 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
Y8K0116-CCV1	1,4-Dioxane - 123-91-1	265 ug/L	Calibration Check	132	80-120	High Bias				
Y8K0116-CCV1	2-Butanone - 78-93-3	15.0 ug/L	Calibration Check	150	80-120	High Bias				
Y8K0116-CCV1	Acetone - 67-64-1	12.6 ug/L	Calibration Check	126	80-120	High Bias				
Y8K0116-CCV1	Naphthalene - 91-20-3	7.98 ug/L	Calibration Check	79.8	80-120	Low Bias				

Batch ID: Y8K0121 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
Y8K0121-CCV1	1,4-Dioxane - 123-91-1	346 ug/L	Calibration Check	173	80-120	High Bias				
Y8K0121-CCV1	2-Butanone - 78-93-3	12.3 ug/L	Calibration Check	123	80-120	High Bias				
Y8K0121-CCV1	Naphthalene - 91-20-3	7.43 ug/L	Calibration Check	74.3	80-120	Low Bias				

Batch ID: Y8K0102 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
Y8K0102-SRD6	Iron - 7439-89-6	8.18 mg/L	Serial Dilution (MW16_102518)		-		24.6	10	Non-dir.	

Batch ID: BJ81780 **Affected Samples:** **See Batch Summary**

QC Sample ID	Analyte - CAS No.	Result	Type of QC Nonconformance	%REC	%REC Limits	Bias	RPD	RPD Limit	Bias	Notes
BJ81780-MS1	Sulfate - 14808-79-8	188 mg/L	Matrix Spike (MW16_102518)	7.75	85-115	Low Bias				

Batch ID: BJ81730 **General Method:** Volatile Organic Compounds by GC/MS

YORK Sample ID	Client Sample ID
18J1263-01	MW16_102518
18J1263-02	MW5_102518
18J1263-03	MW7_102518
18J1263-04	MW14_102518
18J1263-05	MW13_102518
18J1263-06	MW12_102518
18J1263-07	MW15_102518
18J1263-08	DUP01_102518
BJ81730-BLK1	Blank
BJ81730-BS1	LCS
BJ81730-BSD1	LCS Dup
BJ81730-MS1	Matrix Spike
BJ81730-MSD1	Matrix Spike Dup

Batch ID: BJ81780 **General Method:** Anions by Ion Chromatography

YORK Sample ID	Client Sample ID
18J1263-01	MW16_102518
18J1263-02	MW5_102518
18J1263-03	MW7_102518
18J1263-05	MW13_102518
18J1263-06	MW12_102518
18J1263-07	MW15_102518
18J1263-08	DUP01_102518
18J1263-10	FB01_102518
BJ81780-BLK1	Blank
BJ81780-BS1	LCS
BJ81780-DUP1	Duplicate
BJ81780-MS1	Matrix Spike

Batch ID: BK80021 **General Method:** Volatile Organic Compounds by GC/MS

YORK Sample ID	Client Sample ID
18J1263-09	TB01_102518
18J1263-10	FB01_102518
BK80021-BLK1	Blank
BK80021-BS1	LCS
BK80021-BSD1	LCS Dup

No Sample Nonconformances Found

Notes: Other RCP nonconformances, if any, are detailed in the Data Quality Assessment worksheets.

For multiple surrogate analyses such as semi-volatiles, volatiles, etc, single surrogate excursions do not necessarily indicate a bias in the sample. Samples with multiple surrogate excursions may exhibit a bias in the results.

Definitions:
LCS - Laboratory Control Sample
LCS dup - Laboratory Control Sample Duplicate
MS - Matrix Spike
MSD - Matrix Spike Duplicate
BS - Blank Spike also called LCS
BSD - Blank Spike Duplicate also called LCS dup
SRM - Standard Reference Material
DUP - Duplicate

Analytical Batch Summary

Batch ID: BJ81616 **Preparation Method:** EPA 3015A **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
18J1263-01	MW16_102518	10/29/18
18J1263-02	MW5_102518	10/29/18
18J1263-03	MW7_102518	10/29/18
18J1263-04	MW14_102518	10/29/18
18J1263-05	MW13_102518	10/29/18
18J1263-06	MW12_102518	10/29/18
18J1263-07	MW15_102518	10/29/18
18J1263-08	DUP01_102518	10/29/18
18J1263-10	FB01_102518	10/29/18
BJ81616-BLK1	Blank	10/29/18
BJ81616-BS1	LCS	10/29/18
BJ81616-DUP1	Duplicate	10/29/18
BJ81616-MS1	Matrix Spike	10/29/18

Batch ID: BJ81698 **Preparation Method:** EPA 3015A **Prepared By:** SY

YORK Sample ID	Client Sample ID	Preparation Date
18J1263-01	MW16_102518	10/30/18
18J1263-02	MW5_102518	10/30/18
18J1263-03	MW7_102518	10/30/18
18J1263-04	MW14_102518	10/30/18
18J1263-05	MW13_102518	10/30/18
18J1263-06	MW12_102518	10/30/18
18J1263-07	MW15_102518	10/30/18
18J1263-08	DUP01_102518	10/30/18
18J1263-10	FB01_102518	10/30/18
BJ81698-BLK1	Blank	10/30/18
BJ81698-BS1	LCS	10/30/18
BJ81698-DUP1	Duplicate	10/30/18
BJ81698-MS1	Matrix Spike	10/30/18

Batch ID: BJ81730 **Preparation Method:** EPA 5030B **Prepared By:** RDS

YORK Sample ID	Client Sample ID	Preparation Date
18J1263-01	MW16_102518	10/31/18
18J1263-02	MW5_102518	10/31/18
18J1263-03	MW7_102518	10/31/18
18J1263-04	MW14_102518	10/31/18
18J1263-05	MW13_102518	10/31/18
18J1263-06	MW12_102518	10/31/18
18J1263-07	MW15_102518	10/31/18
18J1263-08	DUP01_102518	10/31/18
BJ81730-BLK1	Blank	10/31/18
BJ81730-BS1	LCS	10/31/18
BJ81730-BSD1	LCS Dup	10/31/18

BJ81730-MS1	Matrix Spike	10/31/18
BJ81730-MSD1	Matrix Spike Dup	10/31/18

Batch ID: BJ81780 **Preparation Method:** EPA 300 **Prepared By:** TJM

YORK Sample ID	Client Sample ID	Preparation Date
18J1263-01	MW16_102518	10/31/18
18J1263-02	MW5_102518	10/31/18
18J1263-03	MW7_102518	10/31/18
18J1263-05	MW13_102518	10/31/18
18J1263-06	MW12_102518	10/31/18
18J1263-07	MW15_102518	10/31/18
18J1263-08	DUP01_102518	10/31/18
18J1263-10	FB01_102518	10/31/18
BJ81780-BLK1	Blank	10/31/18
BJ81780-BS1	LCS	10/31/18
BJ81780-DUP1	Duplicate	10/31/18
BJ81780-MS1	Matrix Spike	10/31/18

Batch ID: BK80021 **Preparation Method:** EPA 5030B **Prepared By:** RDS

YORK Sample ID	Client Sample ID	Preparation Date
18J1263-09	TB01_102518	11/01/18
18J1263-10	FB01_102518	11/01/18
BK80021-BLK1	Blank	11/01/18
BK80021-BS1	LCS	11/01/18
BK80021-BSD1	LCS Dup	11/01/18

Batch ID: BK80076 **Preparation Method:** EPA 300 **Prepared By:** TJM

YORK Sample ID	Client Sample ID	Preparation Date
18J1263-04	MW14_102518	11/01/18
BK80076-BLK1	Blank	11/01/18
BK80076-BS1	LCS	11/01/18

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ81730 - EPA 5030B											
Blank (BJ81730-BLK1)								Prepared & Analyzed: 10/31/2018			
1,1,1-Trichloroethane	ND	0.500	ug/L								
1,1-Dichloroethane	ND	0.500	"								
1,1-Dichloroethylene	ND	0.500	"								
1,2,4-Trimethylbenzene	ND	0.500	"								
1,2-Dichlorobenzene	ND	0.500	"								
1,2-Dichloroethane	ND	0.500	"								
1,3,5-Trimethylbenzene	ND	0.500	"								
1,3-Dichlorobenzene	ND	0.500	"								
1,4-Dichlorobenzene	ND	0.500	"								
1,4-Dioxane	ND	80.0	"								
2-Butanone	ND	0.500	"								
Acetone	ND	2.00	"								
Benzene	ND	0.500	"								
Carbon tetrachloride	ND	0.500	"								
Chlorobenzene	ND	0.500	"								
Chloroform	ND	0.500	"								
cis-1,2-Dichloroethylene	ND	0.500	"								
Ethyl Benzene	ND	0.500	"								
Methyl tert-butyl ether (MTBE)	ND	0.500	"								
Methylene chloride	ND	2.00	"								
Naphthalene	ND	2.00	"								
n-Butylbenzene	ND	0.500	"								
n-Propylbenzene	ND	0.500	"								
o-Xylene	ND	0.500	"								
p- & m- Xylenes	ND	1.00	"								
sec-Butylbenzene	ND	0.500	"								
tert-Butylbenzene	ND	0.500	"								
Tetrachloroethylene	ND	0.500	"								
Toluene	ND	0.500	"								
trans-1,2-Dichloroethylene	ND	0.500	"								
Trichloroethylene	ND	0.500	"								
Vinyl Chloride	ND	0.500	"								
Xylenes, Total	ND	1.50	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.9*		*"*	*10.0*		*109*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.55*		*"*	*10.0*		*95.5*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.82*		*"*	*10.0*		*98.2*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ81730 - EPA 5030B											
LCS (BJ81730-BS1)								Prepared & Analyzed: 10/31/2018			
1,1,1-Trichloroethane	11.4		ug/L	10.0		114	78-136				
1,1-Dichloroethane	10.6		"	10.0		106	82-129				
1,1-Dichloroethylene	10.2		"	10.0		102	68-138				
1,2,4-Trimethylbenzene	9.85		"	10.0		98.5	82-132				
1,2-Dichlorobenzene	9.95		"	10.0		99.5	79-123				
1,2-Dichloroethane	11.5		"	10.0		115	73-132				
1,3,5-Trimethylbenzene	9.79		"	10.0		97.9	80-131				
1,3-Dichlorobenzene	9.99		"	10.0		99.9	86-122				
1,4-Dichlorobenzene	9.88		"	10.0		98.8	85-124				
1,4-Dioxane	275		"	210		131	10-349				
2-Butanone	12.5		"	10.0		125	49-152				
Acetone	8.12		"	10.0		81.2	14-150				
Benzene	11.4		"	10.0		114	85-126				
Carbon tetrachloride	11.4		"	10.0		114	77-141				
Chlorobenzene	10.2		"	10.0		102	88-120				
Chloroform	11.3		"	10.0		113	82-128				
cis-1,2-Dichloroethylene	10.5		"	10.0		105	83-129				
Ethyl Benzene	10.7		"	10.0		107	80-131				
Methyl tert-butyl ether (MTBE)	11.1		"	10.0		111	76-135				
Methylene chloride	9.08		"	10.0		90.8	55-137				
Naphthalene	7.92		"	10.0		79.2	70-147				
n-Butylbenzene	9.32		"	10.0		93.2	79-132				
n-Propylbenzene	10.0		"	10.0		100	78-133				
o-Xylene	10.6		"	10.0		106	78-130				
p- & m- Xylenes	18.3		"	20.0		91.6	77-133				
sec-Butylbenzene	10.4		"	10.0		104	79-137				
tert-Butylbenzene	9.56		"	10.0		95.6	77-138				
Tetrachloroethylene	7.87		"	10.0		78.7	82-131	Low Bias			
Toluene	10.7		"	10.0		107	80-127				
trans-1,2-Dichloroethylene	10.2		"	10.0		102	80-132				
Trichloroethylene	9.85		"	10.0		98.5	82-128				
Vinyl Chloride	12.1		"	10.0		121	58-145				
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.9*		*"*	*10.0*		*109*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.62*		*"*	*10.0*		*96.2*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.28*		*"*	*10.0*		*92.8*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ81730 - EPA 5030B											
LCS Dup (BJ81730-BSD1)								Prepared & Analyzed: 10/31/2018			
1,1,1-Trichloroethane	11.0		ug/L	10.0		110	78-136		3.47	30	
1,1-Dichloroethane	10.2		"	10.0		102	82-129		4.23	30	
1,1-Dichloroethylene	9.74		"	10.0		97.4	68-138		5.10	30	
1,2,4-Trimethylbenzene	9.67		"	10.0		96.7	82-132		1.84	30	
1,2-Dichlorobenzene	9.75		"	10.0		97.5	79-123		2.03	30	
1,2-Dichloroethane	11.2		"	10.0		112	73-132		2.64	30	
1,3,5-Trimethylbenzene	9.68		"	10.0		96.8	80-131		1.13	30	
1,3-Dichlorobenzene	9.80		"	10.0		98.0	86-122		1.92	30	
1,4-Dichlorobenzene	9.80		"	10.0		98.0	85-124		0.813	30	
1,4-Dioxane	386		"	210		184	10-349		33.6	30	Non-dir.
2-Butanone	11.9		"	10.0		119	49-152		4.58	30	
Acetone	8.23		"	10.0		82.3	14-150		1.35	30	
Benzene	10.9		"	10.0		109	85-126		4.13	30	
Carbon tetrachloride	10.9		"	10.0		109	77-141		4.40	30	
Chlorobenzene	9.76		"	10.0		97.6	88-120		4.70	30	
Chloroform	10.9		"	10.0		109	82-128		3.87	30	
cis-1,2-Dichloroethylene	10.1		"	10.0		101	83-129		4.07	30	
Ethyl Benzene	10.4		"	10.0		104	80-131		3.14	30	
Methyl tert-butyl ether (MTBE)	10.8		"	10.0		108	76-135		2.83	30	
Methylene chloride	8.67		"	10.0		86.7	55-137		4.62	30	
Naphthalene	7.96		"	10.0		79.6	70-147		0.504	30	
n-Butylbenzene	9.07		"	10.0		90.7	79-132		2.72	30	
n-Propylbenzene	9.86		"	10.0		98.6	78-133		1.41	30	
o-Xylene	10.3		"	10.0		103	78-130		3.63	30	
p- & m- Xylenes	17.7		"	20.0		88.5	77-133		3.50	30	
sec-Butylbenzene	10.2		"	10.0		102	79-137		2.05	30	
tert-Butylbenzene	9.49		"	10.0		94.9	77-138		0.735	30	
Tetrachloroethylene	7.61		"	10.0		76.1	82-131	Low Bias	3.36	30	
Toluene	10.3		"	10.0		103	80-127		4.00	30	
trans-1,2-Dichloroethylene	9.74		"	10.0		97.4	80-132		4.12	30	
Trichloroethylene	9.52		"	10.0		95.2	82-128		3.41	30	
Vinyl Chloride	11.6		"	10.0		116	58-145		4.98	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.8*		*"*	*10.0*		*108*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.57*		*"*	*10.0*		*95.7*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.54*		*"*	*10.0*		*95.4*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ81730 - EPA 5030B											
Matrix Spike (BJ81730-MS1)	*Source sample: 18J1263-01 (MW16_102518)						Prepared & Analyzed: 10/31/2018				
1,1,1-Trichloroethane	11.3		ug/L	10.0	0.00	113	70-146				
1,1-Dichloroethane	10.2		"	10.0	0.00	102	54-146				
1,1-Dichloroethylene	9.48		"	10.0	0.00	94.8	44-165				
1,2,4-Trimethylbenzene	8.63		"	10.0	0.00	86.3	72-129				
1,2-Dichlorobenzene	9.04		"	10.0	0.00	90.4	63-122				
1,2-Dichloroethane	11.0		"	10.0	0.00	110	68-131				
1,3,5-Trimethylbenzene	8.73		"	10.0	0.00	87.3	69-126				
1,3-Dichlorobenzene	8.57		"	10.0	0.00	85.7	74-119				
1,4-Dichlorobenzene	8.46		"	10.0	0.00	84.6	70-124				
1,4-Dioxane	317		"	210	0.00	151	10-310				
2-Butanone	13.1		"	10.0	0.00	131	10-193				
Acetone	5.99		"	10.0	0.00	59.9	13-149				
Benzene	10.8		"	10.0	0.00	108	38-155				
Carbon tetrachloride	11.0		"	10.0	0.00	110	71-146				
Chlorobenzene	9.53		"	10.0	0.00	95.3	81-117				
Chloroform	11.0		"	10.0	0.00	110	80-124				
cis-1,2-Dichloroethylene	23.6		"	10.0	14.8	87.3	76-125				
Ethyl Benzene	9.85		"	10.0	0.00	98.5	72-128				
Methyl tert-butyl ether (MTBE)	10.4		"	10.0	0.00	104	75-128				
Methylene chloride	8.55		"	10.0	0.00	85.5	57-128				
Naphthalene	7.24		"	10.0	0.00	72.4	39-158				
n-Butylbenzene	6.83		"	10.0	0.00	68.3	61-138				
n-Propylbenzene	8.63		"	10.0	0.00	86.3	66-134				
o-Xylene	9.90		"	10.0	0.00	99.0	69-126				
p- & m- Xylenes	16.3		"	20.0	0.00	81.5	67-130				
sec-Butylbenzene	9.15		"	10.0	0.00	91.5	53-155				
tert-Butylbenzene	9.15		"	10.0	0.00	91.5	65-139				
Tetrachloroethylene	14.5		"	10.0	7.96	65.2	64-139				
Toluene	10.1		"	10.0	0.00	101	76-123				
trans-1,2-Dichloroethylene	9.45		"	10.0	0.00	94.5	79-131				
Trichloroethylene	11.2		"	10.0	2.30	89.3	53-145				
Vinyl Chloride	14.4		"	10.0	3.56	108	31-165				
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.7*		*"*	*10.0*		*107*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.60*		*"*	*10.0*		*96.0*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.50*		*"*	*10.0*		*95.0*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ81730 - EPA 5030B											
Matrix Spike Dup (BJ81730-MSD1)	*Source sample: 18J1263-01 (MW16_102518)							Prepared & Analyzed: 10/31/2018			
1,1,1-Trichloroethane	11.6		ug/L	10.0	0.00	116	70-146		2.10	30	
1,1-Dichloroethane	10.5		"	10.0	0.00	105	54-146		3.67	30	
1,1-Dichloroethylene	9.65		"	10.0	0.00	96.5	44-165		1.78	30	
1,2,4-Trimethylbenzene	8.76		"	10.0	0.00	87.6	72-129		1.50	30	
1,2-Dichlorobenzene	9.34		"	10.0	0.00	93.4	63-122		3.26	30	
1,2-Dichloroethane	11.7		"	10.0	0.00	117	68-131		5.73	30	
1,3,5-Trimethylbenzene	8.83		"	10.0	0.00	88.3	69-126		1.14	30	
1,3-Dichlorobenzene	8.66		"	10.0	0.00	86.6	74-119		1.04	30	
1,4-Dichlorobenzene	8.66		"	10.0	0.00	86.6	70-124		2.34	30	
1,4-Dioxane	312		"	210	0.00	148	10-310		1.66	30	
2-Butanone	13.8		"	10.0	0.00	138	10-193		5.87	30	
Acetone	6.66		"	10.0	0.00	66.6	13-149		10.6	30	
Benzene	11.1		"	10.0	0.00	111	38-155		2.55	30	
Carbon tetrachloride	11.2		"	10.0	0.00	112	71-146		2.16	30	
Chlorobenzene	9.72		"	10.0	0.00	97.2	81-117		1.97	30	
Chloroform	11.5		"	10.0	0.00	115	80-124		3.82	30	
cis-1,2-Dichloroethylene	24.5		"	10.0	14.8	96.8	76-125		3.95	30	
Ethyl Benzene	9.94		"	10.0	0.00	99.4	72-128		0.910	30	
Methyl tert-butyl ether (MTBE)	11.1		"	10.0	0.00	111	75-128		6.81	30	
Methylene chloride	8.93		"	10.0	0.00	89.3	57-128		4.35	30	
Naphthalene	7.75		"	10.0	0.00	77.5	39-158		6.80	30	
n-Butylbenzene	6.21		"	10.0	0.00	62.1	61-138		9.51	30	
n-Propylbenzene	8.77		"	10.0	0.00	87.7	66-134		1.61	30	
o-Xylene	10.1		"	10.0	0.00	101	69-126		2.20	30	
p- & m- Xylenes	16.4		"	20.0	0.00	81.9	67-130		0.490	30	
sec-Butylbenzene	9.17		"	10.0	0.00	91.7	53-155		0.218	30	
tert-Butylbenzene	9.42		"	10.0	0.00	94.2	65-139		2.91	30	
Tetrachloroethylene	14.3		"	10.0	7.96	63.5	64-139	Low Bias	1.18	30	
Toluene	10.2		"	10.0	0.00	102	76-123		0.986	30	
trans-1,2-Dichloroethylene	9.65		"	10.0	0.00	96.5	79-131		2.09	30	
Trichloroethylene	11.3		"	10.0	2.30	90.0	53-145		0.621	30	
Vinyl Chloride	14.4		"	10.0	3.56	108	31-165		0.139	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*11.0*		*"*	*10.0*		*110*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.57*		*"*	*10.0*		*95.7*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.82*		*"*	*10.0*		*98.2*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK80021 - EPA 5030B											
Blank (BK80021-BLK1)											
1,1,1-Trichloroethane	ND	0.500	ug/L								
1,1-Dichloroethane	ND	0.500	"								
1,1-Dichloroethylene	ND	0.500	"								
1,2,4-Trimethylbenzene	ND	0.500	"								
1,2-Dichlorobenzene	ND	0.500	"								
1,2-Dichloroethane	ND	0.500	"								
1,3,5-Trimethylbenzene	ND	0.500	"								
1,3-Dichlorobenzene	ND	0.500	"								
1,4-Dichlorobenzene	ND	0.500	"								
1,4-Dioxane	ND	80.0	"								
2-Butanone	ND	0.500	"								
Acetone	ND	2.00	"								
Benzene	ND	0.500	"								
Carbon tetrachloride	ND	0.500	"								
Chlorobenzene	ND	0.500	"								
Chloroform	ND	0.500	"								
cis-1,2-Dichloroethylene	ND	0.500	"								
Ethyl Benzene	ND	0.500	"								
Methyl tert-butyl ether (MTBE)	ND	0.500	"								
Methylene chloride	ND	2.00	"								
Naphthalene	ND	2.00	"								
n-Butylbenzene	ND	0.500	"								
n-Propylbenzene	ND	0.500	"								
o-Xylene	ND	0.500	"								
p- & m- Xylenes	ND	1.00	"								
sec-Butylbenzene	ND	0.500	"								
tert-Butylbenzene	ND	0.500	"								
Tetrachloroethylene	ND	0.500	"								
Toluene	ND	0.500	"								
trans-1,2-Dichloroethylene	ND	0.500	"								
Trichloroethylene	ND	0.500	"								
Vinyl Chloride	ND	0.500	"								
Xylenes, Total	ND	1.50	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.6*		*"*	*10.0*		*106*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.66*		*"*	*10.0*		*96.6*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*10.1*		*"*	*10.0*		*101*	*79-122*				

Prepared & Analyzed: 11/01/2018

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK80021 - EPA 5030B											
LCS (BK80021-BS1)								Prepared & Analyzed: 11/01/2018			
1,1,1-Trichloroethane	11.4		ug/L	10.0		114	78-136				
1,1-Dichloroethane	10.4		"	10.0		104	82-129				
1,1-Dichloroethylene	10.0		"	10.0		100	68-138				
1,2,4-Trimethylbenzene	9.94		"	10.0		99.4	82-132				
1,2-Dichlorobenzene	9.82		"	10.0		98.2	79-123				
1,2-Dichloroethane	11.1		"	10.0		111	73-132				
1,3,5-Trimethylbenzene	9.88		"	10.0		98.8	80-131				
1,3-Dichlorobenzene	9.91		"	10.0		99.1	86-122				
1,4-Dichlorobenzene	9.85		"	10.0		98.5	85-124				
1,4-Dioxane	300		"	210		143	10-349				
2-Butanone	11.5		"	10.0		115	49-152				
Acetone	7.54		"	10.0		75.4	14-150				
Benzene	11.2		"	10.0		112	85-126				
Carbon tetrachloride	11.4		"	10.0		114	77-141				
Chlorobenzene	10.0		"	10.0		100	88-120				
Chloroform	11.1		"	10.0		111	82-128				
cis-1,2-Dichloroethylene	10.4		"	10.0		104	83-129				
Ethyl Benzene	10.7		"	10.0		107	80-131				
Methyl tert-butyl ether (MTBE)	10.7		"	10.0		107	76-135				
Methylene chloride	8.78		"	10.0		87.8	55-137				
Naphthalene	7.67		"	10.0		76.7	70-147				
n-Butylbenzene	9.44		"	10.0		94.4	79-132				
n-Propylbenzene	10.2		"	10.0		102	78-133				
o-Xylene	10.5		"	10.0		105	78-130				
p- & m- Xylenes	18.2		"	20.0		91.0	77-133				
sec-Butylbenzene	10.5		"	10.0		105	79-137				
tert-Butylbenzene	9.70		"	10.0		97.0	77-138				
Tetrachloroethylene	7.83		"	10.0		78.3	82-131	Low Bias			
Toluene	10.6		"	10.0		106	80-127				
trans-1,2-Dichloroethylene	9.90		"	10.0		99.0	80-132				
Trichloroethylene	9.69		"	10.0		96.9	82-128				
Vinyl Chloride	11.5		"	10.0		115	58-145				
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.6*		*"*	*10.0*		*106*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.64*		*"*	*10.0*		*96.4*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.54*		*"*	*10.0*		*95.4*	*79-122*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BK80021 - EPA 5030B											
LCS Dup (BK80021-BSD1)							Prepared & Analyzed: 11/01/2018				
1,1,1-Trichloroethane	10.9		ug/L	10.0		109	78-136		3.86	30	
1,1-Dichloroethane	10.1		"	10.0		101	82-129		3.13	30	
1,1-Dichloroethylene	9.49		"	10.0		94.9	68-138		5.63	30	
1,2,4-Trimethylbenzene	9.55		"	10.0		95.5	82-132		4.00	30	
1,2-Dichlorobenzene	9.83		"	10.0		98.3	79-123		0.102	30	
1,2-Dichloroethane	11.3		"	10.0		113	73-132		1.69	30	
1,3,5-Trimethylbenzene	9.49		"	10.0		94.9	80-131		4.03	30	
1,3-Dichlorobenzene	9.75		"	10.0		97.5	86-122		1.63	30	
1,4-Dichlorobenzene	9.72		"	10.0		97.2	85-124		1.33	30	
1,4-Dioxane	257		"	210		122	10-349		15.5	30	
2-Butanone	12.1		"	10.0		121	49-152		5.01	30	
Acetone	8.20		"	10.0		82.0	14-150		8.39	30	
Benzene	10.8		"	10.0		108	85-126		3.37	30	
Carbon tetrachloride	10.8		"	10.0		108	77-141		4.60	30	
Chlorobenzene	9.79		"	10.0		97.9	88-120		2.42	30	
Chloroform	10.9		"	10.0		109	82-128		1.73	30	
cis-1,2-Dichloroethylene	10.0		"	10.0		100	83-129		3.34	30	
Ethyl Benzene	10.3		"	10.0		103	80-131		3.53	30	
Methyl tert-butyl ether (MTBE)	10.8		"	10.0		108	76-135		1.40	30	
Methylene chloride	8.65		"	10.0		86.5	55-137		1.49	30	
Naphthalene	8.26		"	10.0		82.6	70-147		7.41	30	
n-Butylbenzene	9.10		"	10.0		91.0	79-132		3.67	30	
n-Propylbenzene	9.70		"	10.0		97.0	78-133		5.12	30	
o-Xylene	10.2		"	10.0		102	78-130		2.31	30	
p- & m- Xylenes	17.7		"	20.0		88.5	77-133		2.73	30	
sec-Butylbenzene	10.1		"	10.0		101	79-137		4.07	30	
tert-Butylbenzene	9.30		"	10.0		93.0	77-138		4.21	30	
Tetrachloroethylene	7.62		"	10.0		76.2	82-131	Low Bias	2.72	30	
Toluene	10.3		"	10.0		103	80-127		2.78	30	
trans-1,2-Dichloroethylene	9.50		"	10.0		95.0	80-132		4.12	30	
Trichloroethylene	9.43		"	10.0		94.3	82-128		2.72	30	
Vinyl Chloride	11.0		"	10.0		110	58-145		4.72	30	
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.6*		*"*	*10.0*		*106*	*69-130*				
Surrogate: SURR: Toluene-d8	*9.61*		*"*	*10.0*		*96.1*	*81-117*				
Surrogate: SURR: p-Bromofluorobenzene	*9.40*		*"*	*10.0*		*94.0*	*79-122*				

Metals by ICP - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ81616 - EPA 3015A											
Blank (BJ81616-BLK1)								Prepared: 10/29/2018 Analyzed: 10/30/2018			
Iron - Dissolved	ND	0.278	mg/L								
LCS (BJ81616-BS1)								Prepared: 10/29/2018 Analyzed: 10/30/2018			
Iron - Dissolved	1.17		ug/mL	1.00		117	80-120				
Duplicate (BJ81616-DUP1)	*Source sample: 18J1263-01 (MW16_102518)							Prepared: 10/29/2018 Analyzed: 10/30/2018			
Iron - Dissolved	1.38	0.278	mg/L		1.37				1.19	20	
Matrix Spike (BJ81616-MS1)	*Source sample: 18J1263-01 (MW16_102518)							Prepared: 10/29/2018 Analyzed: 10/30/2018			
Iron - Dissolved	2.39	0.278	mg/L	1.11	1.37	91.8	75-125				
Batch BJ81698 - EPA 3015A											
Blank (BJ81698-BLK1)								Prepared: 10/30/2018 Analyzed: 10/31/2018			
Iron	ND	0.278	mg/L								
LCS (BJ81698-BS1)								Prepared: 10/30/2018 Analyzed: 10/31/2018			
Iron	1.06		ug/mL	1.00		106	80-120				
Duplicate (BJ81698-DUP1)	*Source sample: 18J1263-01 (MW16_102518)							Prepared: 10/30/2018 Analyzed: 10/31/2018			
Iron	6.46	0.278	mg/L		6.57				1.75	20	
Matrix Spike (BJ81698-MS1)	*Source sample: 18J1263-01 (MW16_102518)							Prepared: 10/30/2018 Analyzed: 10/31/2018			
Iron	7.44	0.278	mg/L	1.11	6.57	78.2	75-125				

Anions by Ion Chromatography - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BJ81780 - EPA 300											
Blank (BJ81780-BLK1)								Prepared & Analyzed: 10/31/2018			
Sulfate	ND	1.00	mg/L								
LCS (BJ81780-BS1)								Prepared & Analyzed: 10/31/2018			
Sulfate	10.4	1.00	mg/L	10.0		104	85-115				
Duplicate (BJ81780-DUP1)	*Source sample: 18J1263-01 (MW16_102518)							Prepared & Analyzed: 10/31/2018			
Sulfate	189	10.0	mg/L		187				1.32	15	
Matrix Spike (BJ81780-MS1)	*Source sample: 18J1263-01 (MW16_102518)							Prepared & Analyzed: 10/31/2018			
Sulfate	188	10.0	mg/L	10.0	187	7.75	85-115	Low Bias			
Batch BK80076 - EPA 300											
Blank (BK80076-BLK1)								Prepared & Analyzed: 11/01/2018			
Sulfate	ND	1.00	mg/L								
LCS (BK80076-BS1)								Prepared & Analyzed: 11/01/2018			
Sulfate	10.0	1.00	mg/L	10.0		100	85-115				

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
18J1263-01	MW16_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-02	MW5_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-03	MW7_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-04	MW14_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-05	MW13_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-06	MW12_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-07	MW15_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-08	DUP01_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-09	TB01_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
18J1263-10	FB01_102518	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C

Sample and Data Qualifiers Relating to This Work Order

SCAL-E	The value reported is ESTIMATED. The value is estimated due to its behavior during initial calibration (average Rf>20%).
QR-04	The RPD exceeded control limits for the LCS/LCSD QC.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater than the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
M-SRD1	The serial dilution for this element was outside control limits.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

Laboratory Chain-of-Custody Record

York Project (SDG) No.: 18J1263

Samples Received: 10/25/2018 20:09 **By:** Tom Gabrielson **Logged In:** 10/25/2018 16:45 **By:** Paul Grace

Sample Conditions:

- [x] Custody Seals
- [x] Containers Intact
- [x] COC/Labels Agree
- [x] Preservation Confirmed
- [x] Cooler Temperature Confirmed
- [x] COC Complete
- [x] Chain of Custody Form Received
- [x] Appropriate Sample Volumes Received
- [x] Appropriate Sample Containers Submitted
- [x] Samples Submitted within Holding Times
- [ ] Corrective Action Form Required

Preparation Chain-of-Custody

Sample ID	Reason Prep	Prep Start Date	Prep End Date	Prep Analyst
18J1263-01	EPA 300	10/31/2018 6:30	10/31/2018 6:30	Timothy J. Moore
18J1263-02	EPA 300	10/31/2018 8:16	10/31/2018 8:16	Timothy J. Moore
18J1263-03	EPA 300	10/31/2018 8:34	10/31/2018 8:34	Timothy J. Moore
18J1263-04	EPA 300	11/01/2018 9:59	11/01/2018 9:59	Timothy J. Moore
18J1263-05	EPA 300	10/31/2018 9:46	10/31/2018 9:46	Timothy J. Moore
18J1263-06	EPA 300	10/31/2018 10:04	10/31/2018 10:04	Timothy J. Moore
18J1263-07	EPA 300	10/31/2018 10:22	10/31/2018 10:22	Timothy J. Moore
18J1263-08	EPA 300	10/31/2018 10:40	10/31/2018 10:40	Timothy J. Moore
18J1263-10	EPA 300	10/31/2018 10:58	10/31/2018 10:58	Timothy J. Moore
18J1263-01	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-01	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-02	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-02	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-03	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-03	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-04	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-04	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-05	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-05	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-06	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-06	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-07	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-07	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-08	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-08	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-10	EPA 3015A	10/30/2018 16:02	10/30/2018 16:02	Sarah Yu
18J1263-10	EPA 3015A	10/29/2018 15:01	10/29/2018 15:01	Sarah Yu
18J1263-01	EPA 5030B	10/31/2018 7:30	10/31/2018 7:30	Ryan D. Soracco

Preparation Chain-of-Custody

Sample ID	Reason Prep	Prep Start Date	Prep End Date	Prep Analyst
18J1263-02	EPA 5030B	10/31/2018 7:30	10/31/2018 7:30	Ryan D. Soracco
18J1263-03	EPA 5030B	10/31/2018 7:30	10/31/2018 7:30	Ryan D. Soracco
18J1263-04	EPA 5030B	10/31/2018 7:30	10/31/2018 7:30	Ryan D. Soracco
18J1263-05	EPA 5030B	10/31/2018 7:30	10/31/2018 7:30	Ryan D. Soracco
18J1263-06	EPA 5030B	10/31/2018 7:30	10/31/2018 7:30	Ryan D. Soracco
18J1263-07	EPA 5030B	10/31/2018 7:30	10/31/2018 7:30	Ryan D. Soracco
18J1263-08	EPA 5030B	10/31/2018 7:30	10/31/2018 7:30	Ryan D. Soracco
18J1263-09	EPA 5030B	11/01/2018 7:30	11/01/2018 7:30	Ryan D. Soracco
18J1263-10	EPA 5030B	11/01/2018 7:30	11/01/2018 7:30	Ryan D. Soracco

Analysis Chain-of-Custody

Sample ID	Reason Analysis	Analysis Start Date	Analysis End Date	Analyst
18J1263-01	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:08	Kristin M. Lopez
18J1263-02	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:15	Kristin M. Lopez
18J1263-03	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:18	Kristin M. Lopez
18J1263-04	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:25	Kristin M. Lopez
18J1263-05	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:28	Kristin M. Lopez
18J1263-06	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:31	Kristin M. Lopez
18J1263-07	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:33	Kristin M. Lopez
18J1263-08	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:35	Kristin M. Lopez
18J1263-10	Iron by EPA 6010	10/30/2018 16:02	10/31/2018 16:38	Kristin M. Lopez
18J1263-01	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 17:41	Kristin M. Lopez
18J1263-02	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 17:48	Kristin M. Lopez
18J1263-03	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 17:51	Kristin M. Lopez
18J1263-04	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 17:54	Kristin M. Lopez
18J1263-05	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 17:56	Kristin M. Lopez
18J1263-06	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 17:59	Kristin M. Lopez
18J1263-07	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 18:06	Kristin M. Lopez
18J1263-08	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 18:09	Kristin M. Lopez
18J1263-10	Iron, Dissolved by EPA 6010	10/29/2018 15:01	10/30/2018 18:11	Kristin M. Lopez
18J1263-01	Sulfate as SO4	10/31/2018 6:30	10/31/2018 6:30	Timothy J. Moore
18J1263-02	Sulfate as SO4	10/31/2018 8:16	10/31/2018 8:16	Timothy J. Moore
18J1263-03	Sulfate as SO4	10/31/2018 8:34	10/31/2018 8:34	Timothy J. Moore
18J1263-04	Sulfate as SO4	11/01/2018 9:59	11/01/2018 9:59	Timothy J. Moore
18J1263-05	Sulfate as SO4	10/31/2018 9:46	10/31/2018 9:46	Timothy J. Moore
18J1263-06	Sulfate as SO4	10/31/2018 10:04	10/31/2018 10:04	Timothy J. Moore
18J1263-07	Sulfate as SO4	10/31/2018 10:22	10/31/2018 10:22	Timothy J. Moore
18J1263-08	Sulfate as SO4	10/31/2018 10:40	10/31/2018 10:40	Timothy J. Moore

Analysis Chain-of-Custody

Sample ID	Reason Analysis	Analysis Start Date	Analysis End Date	Analyst
18J1263-10	Sulfate as SO4	10/31/2018 10:58	10/31/2018 10:58	Timothy J. Moore
18J1263-01	VOA, 8260 LOW MASTER	10/31/2018 7:30	10/31/2018 16:06	Steve Swift
18J1263-02	VOA, 8260 LOW MASTER	10/31/2018 7:30	10/31/2018 18:13	Steve Swift
18J1263-03	VOA, 8260 LOW MASTER	10/31/2018 7:30	10/31/2018 18:45	Steve Swift
18J1263-04	VOA, 8260 LOW MASTER	10/31/2018 7:30	10/31/2018 19:16	Steve Swift
18J1263-05	VOA, 8260 LOW MASTER	10/31/2018 7:30	10/31/2018 19:48	Steve Swift
18J1263-06	VOA, 8260 LOW MASTER	10/31/2018 7:30	10/31/2018 20:19	Steve Swift
18J1263-07	VOA, 8260 LOW MASTER	10/31/2018 7:30	10/31/2018 20:51	Steve Swift
18J1263-08	VOA, 8260 LOW MASTER	10/31/2018 7:30	10/31/2018 21:23	Steve Swift
18J1263-09	VOA, 8260 LOW MASTER	11/01/2018 7:30	11/01/2018 12:51	Steve Swift
18J1263-10	VOA, 8260 LOW MASTER	11/01/2018 7:30	11/01/2018 13:23	Steve Swift

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave, Queens, NY 11418
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www.yorklab.com

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 18J1263

YOUR Information	Report To:	Invoice To:
Company: Langan	Company:	Company:
Address: 360 W. 31st St	Address: same	Address: same
Phone: 217-479-5460	Phone:	Phone:
Contact: ~~Elizabeth Adkins~~	Contact: Brian Bochenek	Contact:
E-mail: ~~EadkinsElangan.com~~	E-mail: Bbochenek@langan.com	E-mail:

YOUR Project Number: 170264501

YOUR Project Name: 535 4th Ave

YOUR PO#:

Turn-Around Time

RUSH - Next Day	
RUSH - Two Day	
RUSH - Three Day	
RUSH - Four Day	
Standard (5-7 Day)	✓

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below) Tess Reardon

Tess Reardon

Matrix Codes

S - soil / solid
GW - groundwater
DW - drinking water
WW - wastewater
O - Oil | Other

Samples From

New York ✓
New Jersey
Connecticut
Pennsylvania
Other

Report / EDD Type (circle selections)

Summary Report | CT RCP | Standard Excel EDD
QA Report | CT RCP DQA/DUE | EQuIS (Standard)
NY ASP ~~A~~ Package | NJDEP Reduced Deliverables | NYSDEC EQuIS
NY ASP B Package | NJDKQP | NJDEP SRP HazSite
Other:

YORK Reg. Comp.

Compared to the following Regulation(s): (please fill in)

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
MW16-102518	GW	10/25/18 0820	VOCs, Total+Dissolved Iron, Sulfate, MS/MSD	3 250mL, 3 VOA
MW5-102518	GW	10/25/18 1555	VOCs, T+D Iron, Sulfate	
MW7-102518	GW	10/25/18 1605	VOCs, T+D Iron, Sulfate	
MW14-102518	GW	10/25/18 1445	VOCs, T+D Iron, Sulfate	
MW13-102518	GW	10/25/18 1510	VOCs, T+D Iron, Sulfate	
MW12-102518	GW	10/25/18 1520	VOCs, T+D Iron, Sulfate	
MW15-102518	GW	10/25/18 1535	VOCs, T+D Iron, Sulfate	
DUP01-102518	GW	10/25/18 —	VOCs, T+D Iron, Sulfate	
TB01-102518	GW	10/25/18 ~~1620~~ 1620	VOCs	
FB01-102518	GW	10/25/18 0915	VOCs, T+D Iron, Sulfate	

Comments: Perform MS/MSD on MW16-102518

Preservation: (check all that apply)
HCl ✓ MeOH ___ HNO3 ✓ H2SO4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: ___

Special Instruction
Field Filtered ___
Lab to Filter ✓

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
Tess Reardon/LAN	10/25/18 1630	[signature]/York	10/25/18 1630	[signature]/York	10/25/18 545
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
[signature] York	10/25/18 545	[signature] York	10/25/18 2009		
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by	Temp. Received at Lab
				TC [signature] 10/25/18 2009	4.4 Degrees C

York Analytical Laboratories, Inc.
SDG: 18J1263
CLASS: VOA
METHOD: EPA 8260C

DATA PACKAGE COVER PAGE

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Client Sample Id:	Lab Sample Id:
MW16_102518	18J1263-01
MW5_102518	18J1263-02
MW7_102518	18J1263-03
MW14_102518	18J1263-04
MW13_102518	18J1263-05
MW12_102518	18J1263-06
MW15_102518	18J1263-07
DUP01_102518	18J1263-08
TB01_102518	18J1263-09
FB01_102518	18J1263-10

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the project narrative. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the

Signature:  Name: Benjamin Gulizia

Date: 11/5/2018 Title: Laboratory Director

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Sequence: Y8K0116 Instrument: MSVOA7

Calibration: YI80021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (BJ81730-BS1)			Lab File ID: V729629.D		Analyzed: 10/31/18 10:49			
SURR: 1,2-Dichloroethane-d4	10.0	109	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	96.2	81 - 117	7.484	7.489333	-0.0053	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	92.8	79 - 122	10.269	10.27433	-0.0053	+/-1.00	
LCS Dup (BJ81730-BSD1)			Lab File ID: V729630.D		Analyzed: 10/31/18 11:21			
SURR: 1,2-Dichloroethane-d4	10.0	108	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	95.7	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	95.4	79 - 122	10.269	10.27433	-0.0053	+/-1.00	
Blank (BJ81730-BLK1)			Lab File ID: V729632.D		Analyzed: 10/31/18 12:24			
SURR: 1,2-Dichloroethane-d4	10.0	109	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	95.5	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	98.2	79 - 122	10.271	10.27433	-0.0033	+/-1.00	
MW16_102518 (18J1263-01)			Lab File ID: V729639.D		Analyzed: 10/31/18 16:06			
SURR: 1,2-Dichloroethane-d4	10.0	107	69 - 130	5.684	5.686667	-0.0027	+/-1.00	
SURR: Toluene-d8	10.0	94.8	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	101	79 - 122	10.269	10.27433	-0.0053	+/-1.00	
Matrix Spike (BJ81730-MS1)			Lab File ID: V729640.D		Analyzed: 10/31/18 16:38			
SURR: 1,2-Dichloroethane-d4	10.0	107	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	96.0	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	95.0	79 - 122	10.269	10.27433	-0.0053	+/-1.00	
Matrix Spike Dup (BJ81730-MSD1)			Lab File ID: V729641.D		Analyzed: 10/31/18 17:10			
SURR: 1,2-Dichloroethane-d4	10.0	110	69 - 130	5.684	5.686667	-0.0027	+/-1.00	
SURR: Toluene-d8	10.0	95.7	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	98.2	79 - 122	10.269	10.27433	-0.0053	+/-1.00	
MW5_102518 (18J1263-02)			Lab File ID: V729643.D		Analyzed: 10/31/18 18:13			
SURR: 1,2-Dichloroethane-d4	10.0	108	69 - 130	5.684	5.686667	-0.0027	+/-1.00	
SURR: Toluene-d8	10.0	95.4	81 - 117	7.484	7.489333	-0.0053	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	101	79 - 122	10.269	10.27433	-0.0053	+/-1.00	
MW7_102518 (18J1263-03)			Lab File ID: V729644.D		Analyzed: 10/31/18 18:45			
SURR: 1,2-Dichloroethane-d4	10.0	113	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	94.1	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	101	79 - 122	10.271	10.27433	-0.0033	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Sequence: Y8K0116 Instrument: MSVOA7

Calibration: YI80021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
MW14_102518 (18J1263-04)			Lab File ID: V729645.D		Analyzed: 10/31/18 19:16			
SURR: 1,2-Dichloroethane-d4	10.0	108	69 - 130	5.684	5.686667	-0.0027	+/-1.00	
SURR: Toluene-d8	10.0	96.1	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	99.5	79 - 122	10.271	10.27433	-0.0033	+/-1.00	
MW13_102518 (18J1263-05)			Lab File ID: V729646.D		Analyzed: 10/31/18 19:48			
SURR: 1,2-Dichloroethane-d4	10.0	110	69 - 130	5.684	5.686667	-0.0027	+/-1.00	
SURR: Toluene-d8	10.0	95.9	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	97.4	79 - 122	10.271	10.27433	-0.0033	+/-1.00	
MW12_102518 (18J1263-06)			Lab File ID: V729647.D		Analyzed: 10/31/18 20:19			
SURR: 1,2-Dichloroethane-d4	10.0	106	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	96.5	81 - 117	7.484	7.489333	-0.0053	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	101	79 - 122	10.271	10.27433	-0.0033	+/-1.00	
MW15_102518 (18J1263-07)			Lab File ID: V729648.D		Analyzed: 10/31/18 20:51			
SURR: 1,2-Dichloroethane-d4	10.0	108	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	95.0	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	102	79 - 122	10.271	10.27433	-0.0033	+/-1.00	
DUP01_102518 (18J1263-08)			Lab File ID: V729649.D		Analyzed: 10/31/18 21:23			
SURR: 1,2-Dichloroethane-d4	10.0	110	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	95.4	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	101	79 - 122	10.271	10.27433	-0.0033	+/-1.00	

FORM II **SURROGATE STANDARD RECOVERY AND RT SUMMARY**

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Sequence:	Y8K0121	Instrument:	MSVOA7
		Calibration:	YI80021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
LCS (BK80021-BS1)			Lab File ID: V729652.D		Analyzed: 11/01/18 10:44			
SURR: 1,2-Dichloroethane-d4	10.0	106	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	96.4	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	95.4	79 - 122	10.271	10.27433	-0.0033	+/-1.00	
LCS Dup (BK80021-BSD1)			Lab File ID: V729653.D		Analyzed: 11/01/18 11:16			
SURR: 1,2-Dichloroethane-d4	10.0	106	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	96.1	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	94.0	79 - 122	10.269	10.27433	-0.0053	+/-1.00	
Blank (BK80021-BLK1)			Lab File ID: V729654.D		Analyzed: 11/01/18 11:47			
SURR: 1,2-Dichloroethane-d4	10.0	106	69 - 130	5.684	5.686667	-0.0027	+/-1.00	
SURR: Toluene-d8	10.0	96.6	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	101	79 - 122	10.269	10.27433	-0.0053	+/-1.00	
TB01_102518 (18J1263-09)			Lab File ID: V729656.D		Analyzed: 11/01/18 12:51			
SURR: 1,2-Dichloroethane-d4	10.0	108	69 - 130	5.686	5.686667	-0.0007	+/-1.00	
SURR: Toluene-d8	10.0	95.5	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	98.6	79 - 122	10.271	10.27433	-0.0033	+/-1.00	
FB01_102518 (18J1263-10)			Lab File ID: V729657.D		Analyzed: 11/01/18 13:23			
SURR: 1,2-Dichloroethane-d4	10.0	110	69 - 130	5.683	5.686667	-0.0037	+/-1.00	
SURR: Toluene-d8	10.0	94.4	81 - 117	7.486	7.489333	-0.0033	+/-1.00	
SURR: p-Bromofluorobenzene	10.0	97.9	79 - 122	10.271	10.27433	-0.0033	+/-1.00	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260C

MW16_102518

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Matrix: Water
Batch: BJ81730
Laboratory ID: BJ81730-MS1
Preparation: EPA 5030B
Initial/Final: 25 mL / 25 mL
Source Sample Name: MW16_102518

COMPOUND	SPIKE ADDED ppb	SAMPLE CONCENTRATION ppb	MS CONCENTRATION ppb	MS % REC. #	QC LIMITS REC.
1,1,1-Trichloroethane	10.0	0.00	11.3	113	70 - 146
1,1-Dichloroethane	10.0	0.00	10.2	102	54 - 146
1,1-Dichloroethylene	10.0	0.00	9.48	94.8	44 - 165
1,2,4-Trimethylbenzene	10.0	0.00	8.63	86.3	72 - 129
1,2-Dichlorobenzene	10.0	0.00	9.04	90.4	63 - 122
1,2-Dichloroethane	10.0	0.00	11.0	110	68 - 131
1,3,5-Trimethylbenzene	10.0	0.00	8.73	87.3	69 - 126
1,3-Dichlorobenzene	10.0	0.00	8.57	85.7	74 - 119
1,4-Dichlorobenzene	10.0	0.00	8.46	84.6	70 - 124
1,4-Dioxane	210	0.00	317	151	10 - 310
2-Butanone	10.0	0.00	13.1	131	10 - 193
Acetone	10.0	0.00	5.99	59.9	13 - 149
Benzene	10.0	0.00	10.8	108	38 - 155
Carbon tetrachloride	10.0	0.00	11.0	110	71 - 146
Chlorobenzene	10.0	0.00	9.53	95.3	81 - 117
Chloroform	10.0	0.00	11.0	110	80 - 124
cis-1,2-Dichloroethylene	10.0	14.8	23.6	87.3	76 - 125
Ethyl Benzene	10.0	0.00	9.85	98.5	72 - 128
Methyl tert-butyl ether (MTBE)	10.0	0.00	10.4	104	75 - 128
Methylene chloride	10.0	0.00	8.55	85.5	57 - 128
Naphthalene	10.0	0.00	7.24	72.4	39 - 158
n-Butylbenzene	10.0	0.00	6.83	68.3	61 - 138
n-Propylbenzene	10.0	0.00	8.63	86.3	66 - 134
o-Xylene	10.0	0.00	9.90	99.0	69 - 126
p- & m- Xylenes	20.0	0.00	16.3	81.5	67 - 130
sec-Butylbenzene	10.0	0.00	9.15	91.5	53 - 155
tert-Butylbenzene	10.0	0.00	9.15	91.5	65 - 139
Tetrachloroethylene	10.0	7.96	14.5	65.2	64 - 139
Toluene	10.0	0.00	10.1	101	76 - 123
trans-1,2-Dichloroethylene	10.0	0.00	9.45	94.5	79 - 131
Trichloroethylene	10.0	2.30	11.2	89.3	53 - 145
Vinyl Chloride	10.0	3.56	14.4	108	31 - 165

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260C

MW16_102518

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81730	Laboratory ID:	BJ81730-MS1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

Source Sample Name: MW16_102518

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260C

MW16_102518

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Matrix: Water
Batch: BJ81730
Laboratory ID: BJ81730-MSD1
Preparation: EPA 5030B
Initial/Final: 25 mL / 25 mL
Source Sample Name: MW16_102518

COMPOUND	SPIKE ADDED ppb	MSD CONCENTRATION ppb	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,1-Trichloroethane	10.0	11.6	116	2.10	30	70 - 146
1,1-Dichloroethane	10.0	10.5	105	3.67	30	54 - 146
1,1-Dichloroethylene	10.0	9.65	96.5	1.78	30	44 - 165
1,2,4-Trimethylbenzene	10.0	8.76	87.6	1.50	30	72 - 129
1,2-Dichlorobenzene	10.0	9.34	93.4	3.26	30	63 - 122
1,2-Dichloroethane	10.0	11.7	117	5.73	30	68 - 131
1,3,5-Trimethylbenzene	10.0	8.83	88.3	1.14	30	69 - 126
1,3-Dichlorobenzene	10.0	8.66	86.6	1.04	30	74 - 119
1,4-Dichlorobenzene	10.0	8.66	86.6	2.34	30	70 - 124
1,4-Dioxane	210	312	148	1.66	30	10 - 310
2-Butanone	10.0	13.8	138	5.87	30	10 - 193
Acetone	10.0	6.66	66.6	10.6	30	13 - 149
Benzene	10.0	11.1	111	2.55	30	38 - 155
Carbon tetrachloride	10.0	11.2	112	2.16	30	71 - 146
Chlorobenzene	10.0	9.72	97.2	1.97	30	81 - 117
Chloroform	10.0	11.5	115	3.82	30	80 - 124
cis-1,2-Dichloroethylene	10.0	24.5	96.8	3.95	30	76 - 125
Ethyl Benzene	10.0	9.94	99.4	0.910	30	72 - 128
Methyl tert-butyl ether (MTBE)	10.0	11.1	111	6.81	30	75 - 128
Methylene chloride	10.0	8.93	89.3	4.35	30	57 - 128
Naphthalene	10.0	7.75	77.5	6.80	30	39 - 158
n-Butylbenzene	10.0	6.21	62.1	9.51	30	61 - 138
n-Propylbenzene	10.0	8.77	87.7	1.61	30	66 - 134
o-Xylene	10.0	10.1	101	2.20	30	69 - 126
p- & m- Xylenes	20.0	16.4	81.9	0.490	30	67 - 130
sec-Butylbenzene	10.0	9.17	91.7	0.218	30	53 - 155
tert-Butylbenzene	10.0	9.42	94.2	2.91	30	65 - 139
Tetrachloroethylene	10.0	14.3	63.5 *	1.18	30	64 - 139
Toluene	10.0	10.2	102	0.986	30	76 - 123
trans-1,2-Dichloroethylene	10.0	9.65	96.5	2.09	30	79 - 131
Trichloroethylene	10.0	11.3	90.0	0.621	30	53 - 145
Vinyl Chloride	10.0	14.4	108	0.139	30	31 - 165

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260C

MW16_102518

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81730	Laboratory ID:	BJ81730-MSD1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

Source Sample Name: MW16_102518

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81730	Laboratory ID:	BJ81730-BS1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

COMPOUND	SPIKE ADDED ppb	LCS CONCENTRATION ppb	LCS % REC. #	QC LIMITS REC.
1,1,1-Trichloroethane	10.0	11.4	114	78 - 136
1,1-Dichloroethane	10.0	10.6	106	82 - 129
1,1-Dichloroethylene	10.0	10.2	102	68 - 138
1,2,4-Trimethylbenzene	10.0	9.85	98.5	82 - 132
1,2-Dichlorobenzene	10.0	9.95	99.5	79 - 123
1,2-Dichloroethane	10.0	11.5	115	73 - 132
1,3,5-Trimethylbenzene	10.0	9.79	97.9	80 - 131
1,3-Dichlorobenzene	10.0	9.99	99.9	86 - 122
1,4-Dichlorobenzene	10.0	9.88	98.8	85 - 124
1,4-Dioxane	210	275	131	10 - 349
2-Butanone	10.0	12.5	125	49 - 152
Acetone	10.0	8.12	81.2	14 - 150
Benzene	10.0	11.4	114	85 - 126
Carbon tetrachloride	10.0	11.4	114	77 - 141
Chlorobenzene	10.0	10.2	102	88 - 120
Chloroform	10.0	11.3	113	82 - 128
cis-1,2-Dichloroethylene	10.0	10.5	105	83 - 129
Ethyl Benzene	10.0	10.7	107	80 - 131
Methyl tert-butyl ether (MTBE)	10.0	11.1	111	76 - 135
Methylene chloride	10.0	9.08	90.8	55 - 137
Naphthalene	10.0	7.92	79.2	70 - 147
n-Butylbenzene	10.0	9.32	93.2	79 - 132
n-Propylbenzene	10.0	10.0	100	78 - 133
o-Xylene	10.0	10.6	106	78 - 130
p- & m- Xylenes	20.0	18.3	91.6	77 - 133
sec-Butylbenzene	10.0	10.4	104	79 - 137
tert-Butylbenzene	10.0	9.56	95.6	77 - 138
Tetrachloroethylene	10.0	7.87	78.7 *	82 - 131
Toluene	10.0	10.7	107	80 - 127
trans-1,2-Dichloroethylene	10.0	10.2	102	80 - 132

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81730	Laboratory ID:	BJ81730-BS1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

COMPOUND	SPIKE ADDED ppb	LCS CONCENTRATION ppb	LCS % REC. #	QC LIMITS REC.
Trichloroethylene	10.0	9.85	98.5	82 - 128
Vinyl Chloride	10.0	12.1	121	58 - 145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81730	Laboratory ID:	BJ81730-BSD1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

COMPOUND	SPIKE ADDED ppb	LCSD CONCENTRATION ppb	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,1-Trichloroethane	10.0	11.0	110	3.47	30	78 - 136
1,1-Dichloroethane	10.0	10.2	102	4.23	30	82 - 129
1,1-Dichloroethylene	10.0	9.74	97.4	5.10	30	68 - 138
1,2,4-Trimethylbenzene	10.0	9.67	96.7	1.84	30	82 - 132
1,2-Dichlorobenzene	10.0	9.75	97.5	2.03	30	79 - 123
1,2-Dichloroethane	10.0	11.2	112	2.64	30	73 - 132
1,3,5-Trimethylbenzene	10.0	9.68	96.8	1.13	30	80 - 131
1,3-Dichlorobenzene	10.0	9.80	98.0	1.92	30	86 - 122
1,4-Dichlorobenzene	10.0	9.80	98.0	0.813	30	85 - 124
1,4-Dioxane	210	386	184	33.6 *	30	10 - 349
2-Butanone	10.0	11.9	119	4.58	30	49 - 152
Acetone	10.0	8.23	82.3	1.35	30	14 - 150
Benzene	10.0	10.9	109	4.13	30	85 - 126
Carbon tetrachloride	10.0	10.9	109	4.40	30	77 - 141
Chlorobenzene	10.0	9.76	97.6	4.70	30	88 - 120
Chloroform	10.0	10.9	109	3.87	30	82 - 128
cis-1,2-Dichloroethylene	10.0	10.1	101	4.07	30	83 - 129
Ethyl Benzene	10.0	10.4	104	3.14	30	80 - 131
Methyl tert-butyl ether (MTBE)	10.0	10.8	108	2.83	30	76 - 135
Methylene chloride	10.0	8.67	86.7	4.62	30	55 - 137
Naphthalene	10.0	7.96	79.6	0.504	30	70 - 147
n-Butylbenzene	10.0	9.07	90.7	2.72	30	79 - 132
n-Propylbenzene	10.0	9.86	98.6	1.41	30	78 - 133
o-Xylene	10.0	10.3	103	3.63	30	78 - 130
p- & m- Xylenes	20.0	17.7	88.5	3.50	30	77 - 133
sec-Butylbenzene	10.0	10.2	102	2.05	30	79 - 137
tert-Butylbenzene	10.0	9.49	94.9	0.735	30	77 - 138
Tetrachloroethylene	10.0	7.61	76.1 *	3.36	30	82 - 131
Toluene	10.0	10.3	103	4.00	30	80 - 127
trans-1,2-Dichloroethylene	10.0	9.74	97.4	4.12	30	80 - 132

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81730	Laboratory ID:	BJ81730-BSD1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

COMPOUND	SPIKE ADDED ppb	LCSD CONCENTRATION ppb	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Trichloroethylene	10.0	9.52	95.2	3.41	30	82 - 128
Vinyl Chloride	10.0	11.6	116	4.98	30	58 - 145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BK80021	Laboratory ID:	BK80021-BS1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

COMPOUND	SPIKE ADDED ppb	LCS CONCENTRATION ppb	LCS % REC. #	QC LIMITS REC.
1,1,1-Trichloroethane	10.0	11.4	114	78 - 136
1,1-Dichloroethane	10.0	10.4	104	82 - 129
1,1-Dichloroethylene	10.0	10.0	100	68 - 138
1,2,4-Trimethylbenzene	10.0	9.94	99.4	82 - 132
1,2-Dichlorobenzene	10.0	9.82	98.2	79 - 123
1,2-Dichloroethane	10.0	11.1	111	73 - 132
1,3,5-Trimethylbenzene	10.0	9.88	98.8	80 - 131
1,3-Dichlorobenzene	10.0	9.91	99.1	86 - 122
1,4-Dichlorobenzene	10.0	9.85	98.5	85 - 124
1,4-Dioxane	210	300	143	10 - 349
2-Butanone	10.0	11.5	115	49 - 152
Acetone	10.0	7.54	75.4	14 - 150
Benzene	10.0	11.2	112	85 - 126
Carbon tetrachloride	10.0	11.4	114	77 - 141
Chlorobenzene	10.0	10.0	100	88 - 120
Chloroform	10.0	11.1	111	82 - 128
cis-1,2-Dichloroethylene	10.0	10.4	104	83 - 129
Ethyl Benzene	10.0	10.7	107	80 - 131
Methyl tert-butyl ether (MTBE)	10.0	10.7	107	76 - 135
Methylene chloride	10.0	8.78	87.8	55 - 137
Naphthalene	10.0	7.67	76.7	70 - 147
n-Butylbenzene	10.0	9.44	94.4	79 - 132
n-Propylbenzene	10.0	10.2	102	78 - 133
o-Xylene	10.0	10.5	105	78 - 130
p- & m- Xylenes	20.0	18.2	91.0	77 - 133
sec-Butylbenzene	10.0	10.5	105	79 - 137
tert-Butylbenzene	10.0	9.70	97.0	77 - 138
Tetrachloroethylene	10.0	7.83	78.3 *	82 - 131
Toluene	10.0	10.6	106	80 - 127
trans-1,2-Dichloroethylene	10.0	9.90	99.0	80 - 132

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BK80021	Laboratory ID:	BK80021-BS1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

COMPOUND	SPIKE ADDED ppb	LCS CONCENTRATION ppb	LCS % REC. #	QC LIMITS REC.
Trichloroethylene	10.0	9.69	96.9	82 - 128
Vinyl Chloride	10.0	11.5	115	58 - 145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water

Batch: BK80021 Laboratory ID: BK80021-BSD1

Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

COMPOUND	SPIKE ADDED ppb	LCSD CONCENTRATION ppb	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,1-Trichloroethane	10.0	10.9	109	3.86	30	78 - 136
1,1-Dichloroethane	10.0	10.1	101	3.13	30	82 - 129
1,1-Dichloroethylene	10.0	9.49	94.9	5.63	30	68 - 138
1,2,4-Trimethylbenzene	10.0	9.55	95.5	4.00	30	82 - 132
1,2-Dichlorobenzene	10.0	9.83	98.3	0.102	30	79 - 123
1,2-Dichloroethane	10.0	11.3	113	1.69	30	73 - 132
1,3,5-Trimethylbenzene	10.0	9.49	94.9	4.03	30	80 - 131
1,3-Dichlorobenzene	10.0	9.75	97.5	1.63	30	86 - 122
1,4-Dichlorobenzene	10.0	9.72	97.2	1.33	30	85 - 124
1,4-Dioxane	210	257	122	15.5	30	10 - 349
2-Butanone	10.0	12.1	121	5.01	30	49 - 152
Acetone	10.0	8.20	82.0	8.39	30	14 - 150
Benzene	10.0	10.8	108	3.37	30	85 - 126
Carbon tetrachloride	10.0	10.8	108	4.60	30	77 - 141
Chlorobenzene	10.0	9.79	97.9	2.42	30	88 - 120
Chloroform	10.0	10.9	109	1.73	30	82 - 128
cis-1,2-Dichloroethylene	10.0	10.0	100	3.34	30	83 - 129
Ethyl Benzene	10.0	10.3	103	3.53	30	80 - 131
Methyl tert-butyl ether (MTBE)	10.0	10.8	108	1.40	30	76 - 135
Methylene chloride	10.0	8.65	86.5	1.49	30	55 - 137
Naphthalene	10.0	8.26	82.6	7.41	30	70 - 147
n-Butylbenzene	10.0	9.10	91.0	3.67	30	79 - 132
n-Propylbenzene	10.0	9.70	97.0	5.12	30	78 - 133
o-Xylene	10.0	10.2	102	2.31	30	78 - 130
p- & m- Xylenes	20.0	17.7	88.5	2.73	30	77 - 133
sec-Butylbenzene	10.0	10.1	101	4.07	30	79 - 137
tert-Butylbenzene	10.0	9.30	93.0	4.21	30	77 - 138
Tetrachloroethylene	10.0	7.62	76.2 *	2.72	30	82 - 131
Toluene	10.0	10.3	103	2.78	30	80 - 127
trans-1,2-Dichloroethylene	10.0	9.50	95.0	4.12	30	80 - 132

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BK80021	Laboratory ID:	BK80021-BSD1
Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL

COMPOUND	SPIKE ADDED ppb	LCSD CONCENTRATION ppb	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Trichloroethylene	10.0	9.43	94.3	2.72	30	82 - 128
Vinyl Chloride	10.0	11.0	110	4.72	30	58 - 145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM IV **PREPARATION BATCH SUMMARY**

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Batch: BJ81730 Batch Matrix: Water Preparation: EPA 5030B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW16_102518	18J1263-01	V729639.D	10/31/18 07:30	Log P375 vers for quarterly GW
MW5_102518	18J1263-02	V729643.D	10/31/18 07:30	Log P375 vers for quarterly GW
MW7_102518	18J1263-03	V729644.D	10/31/18 07:30	Log P375 vers for quarterly GW
MW14_102518	18J1263-04	V729645.D	10/31/18 07:30	Log P375 vers for quarterly GW
MW13_102518	18J1263-05	V729646.D	10/31/18 07:30	Log P375 vers for quarterly GW
MW12_102518	18J1263-06	V729647.D	10/31/18 07:30	Log P375 vers for quarterly GW
MW15_102518	18J1263-07	V729648.D	10/31/18 07:30	Log P375 vers for quarterly GW
DUP01_102518	18J1263-08	V729649.D	10/31/18 07:30	Log P375 vers for quarterly GW
Blank	BJ81730-BLK1	V729632.D	10/31/18 07:30	
LCS	BJ81730-BS1	V729629.D	10/31/18 07:30	
LCS Dup	BJ81730-BSD1	V729630.D	10/31/18 07:30	
MW16_102518	BJ81730-MS1	V729640.D	10/31/18 07:30	
MW16_102518	BJ81730-MSD1	V729641.D	10/31/18 07:30	

FORM IV **PREPARATION BATCH SUMMARY**

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Batch: BK80021 Batch Matrix: Water Preparation: EPA 5030B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
TB01_102518	18J1263-09	V729656.D	11/01/18 07:30	Log P375 vers for quarterly GW
FB01_102518	18J1263-10	V729657.D	11/01/18 07:30	Log P375 vers for quarterly GW
Blank	BK80021-BLK1	V729654.D	11/01/18 07:30	
LCS	BK80021-BS1	V729652.D	11/01/18 07:30	
LCS Dup	BK80021-BSD1	V729653.D	11/01/18 07:30	

FORM I

METHOD BLANK DATA SHEET

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BJ81730-BLK1	File ID:	V729632.D
Prepared:	10/31/18 07:30	Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Analyzed:	10/31/18 12:24	Instrument:	MSVOA7		
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021

CAS NO.	COMPOUND	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	0.500	U
75-34-3	1,1-Dichloroethane	0.500	U
75-35-4	1,1-Dichloroethylene	0.500	U
95-63-6	1,2,4-Trimethylbenzene	0.500	U
95-50-1	1,2-Dichlorobenzene	0.500	U
107-06-2	1,2-Dichloroethane	0.500	U
108-67-8	1,3,5-Trimethylbenzene	0.500	U
541-73-1	1,3-Dichlorobenzene	0.500	U
106-46-7	1,4-Dichlorobenzene	0.500	U
123-91-1	1,4-Dioxane	80.0	U
78-93-3	2-Butanone	0.500	U
67-64-1	Acetone	2.00	U
71-43-2	Benzene	0.500	U
56-23-5	Carbon tetrachloride	0.500	U
108-90-7	Chlorobenzene	0.500	U
67-66-3	Chloroform	0.500	U
156-59-2	cis-1,2-Dichloroethylene	0.500	U
100-41-4	Ethyl Benzene	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.500	U
75-09-2	Methylene chloride	2.00	U
91-20-3	Naphthalene	2.00	U
104-51-8	n-Butylbenzene	0.500	U
103-65-1	n-Propylbenzene	0.500	U
95-47-6	o-Xylene	0.500	U
179601-23-1	p- & m- Xylenes	1.00	U
135-98-8	sec-Butylbenzene	0.500	U
98-06-6	tert-Butylbenzene	0.500	U
127-18-4	Tetrachloroethylene	0.500	U
108-88-3	Toluene	0.500	U
156-60-5	trans-1,2-Dichloroethylene	0.500	U

FORM I

METHOD BLANK DATA SHEET

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BJ81730-BLK1	File ID:	V729632.D
Prepared:	10/31/18 07:30	Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Analyzed:	10/31/18 12:24	Instrument:	MSVOA7		
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021

CAS NO.	COMPOUND	CONC. (ug/L)	Q
79-01-6	Trichloroethylene	0.500	U
75-01-4	Vinyl Chloride	0.500	U
1330-20-7	Xylenes, Total	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.9	109	69 - 130	
SURR: p-Bromofluorobenzene	10.0	9.82	98.2	79 - 122	
SURR: Toluene-d8	10.0	9.55	95.5	81 - 117	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: 1,2-Dichlorobenzene-d4	87820	11.996	100688	11.996	
ISTD: Chlorobenzene-d5	243950	9	252406	9	
ISTD: Fluorobenzene	63370	5.959	65709	5.956	

FORM I

METHOD BLANK DATA SHEET

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BK80021-BLK1	File ID:	V729654.D
Prepared:	11/01/18 07:30	Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Analyzed:	11/01/18 11:47	Instrument:	MSVOA7		
Batch:	BK80021	Sequence:	Y8K0121	Calibration:	YI80021

CAS NO.	COMPOUND	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	0.500	U
75-34-3	1,1-Dichloroethane	0.500	U
75-35-4	1,1-Dichloroethylene	0.500	U
95-63-6	1,2,4-Trimethylbenzene	0.500	U
95-50-1	1,2-Dichlorobenzene	0.500	U
107-06-2	1,2-Dichloroethane	0.500	U
108-67-8	1,3,5-Trimethylbenzene	0.500	U
541-73-1	1,3-Dichlorobenzene	0.500	U
106-46-7	1,4-Dichlorobenzene	0.500	U
123-91-1	1,4-Dioxane	80.0	U
78-93-3	2-Butanone	0.500	U
67-64-1	Acetone	2.00	U
71-43-2	Benzene	0.500	U
56-23-5	Carbon tetrachloride	0.500	U
108-90-7	Chlorobenzene	0.500	U
67-66-3	Chloroform	0.500	U
156-59-2	cis-1,2-Dichloroethylene	0.500	U
100-41-4	Ethyl Benzene	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.500	U
75-09-2	Methylene chloride	2.00	U
91-20-3	Naphthalene	2.00	U
104-51-8	n-Butylbenzene	0.500	U
103-65-1	n-Propylbenzene	0.500	U
95-47-6	o-Xylene	0.500	U
179601-23-1	p- & m- Xylenes	1.00	U
135-98-8	sec-Butylbenzene	0.500	U
98-06-6	tert-Butylbenzene	0.500	U
127-18-4	Tetrachloroethylene	0.500	U
108-88-3	Toluene	0.500	U
156-60-5	trans-1,2-Dichloroethylene	0.500	U

FORM I

METHOD BLANK DATA SHEET

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BK80021-BLK1	File ID:	V729654.D
Prepared:	11/01/18 07:30	Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Analyzed:	11/01/18 11:47	Instrument:	MSVOA7		
Batch:	BK80021	Sequence:	Y8K0121	Calibration:	YI80021

CAS NO.	COMPOUND	CONC. (ug/L)	Q
79-01-6	Trichloroethylene	0.500	U
75-01-4	Vinyl Chloride	0.500	U
1330-20-7	Xylenes, Total	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.6	106	69 - 130	
SURR: p-Bromofluorobenzene	10.0	10.1	101	79 - 122	
SURR: Toluene-d8	10.0	9.66	96.6	81 - 117	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: 1,2-Dichlorobenzene-d4	86219	11.996	100160	11.996	
ISTD: Chlorobenzene-d5	242754	9	245464	9	
ISTD: Fluorobenzene	64623	5.959	64026	5.959	

FORM V **MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Lab File ID:	V728674.D	Injection Date:	09/18/18
Instrument ID:	MSVOA7	Injection Time:	08:28
Sequence:	Y8I1906	Lab Sample ID:	Y8I1906-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	20.3	PASS
75	30 - 60% of 95	47.7	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.68	PASS
173	Less than 2% of 174	0	PASS
174	50 - 100% of 95	79.4	PASS
175	5 - 9% of 174	7.73	PASS
176	95 - 101% of 174	97.6	PASS
177	5 - 9% of 176	6.72	PASS

FORM V MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Lab File ID:	V729627.D	Injection Date:	10/31/18
Instrument ID:	MSVOA7	Injection Time:	09:40
Sequence:	Y8K0116	Lab Sample ID:	Y8K0116-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	21.2	PASS
75	30 - 60% of 95	51.1	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.9	PASS
173	Less than 2% of 174	0	PASS
174	50 - 100% of 95	80.4	PASS
175	5 - 9% of 174	7.33	PASS
176	95 - 101% of 174	95.9	PASS
177	5 - 9% of 176	6.86	PASS

FORM V **MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Lab File ID:	V729650.D	Injection Date:	11/01/18
Instrument ID:	MSVOA7	Injection Time:	09:40
Sequence:	Y8K0121	Lab Sample ID:	Y8K0121-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	21.1	PASS
75	30 - 60% of 95	53.1	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.99	PASS
173	Less than 2% of 174	0	PASS
174	50 - 100% of 95	79.6	PASS
175	5 - 9% of 174	7.86	PASS
176	95 - 101% of 174	96.4	PASS
177	5 - 9% of 176	7.2	PASS

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Sequence: Y8I1906
Instrument: MSVOA7
Calibration: YI80021

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y8I1906-TUN1	V728674.D	09/18/18 08:28
Cal Standard	Y8I1906-CAL1	V728676.D	09/18/18 09:45
Cal Standard	Y8I1906-CAL2	V728677.D	09/18/18 10:17
Cal Standard	Y8I1906-CAL3	V728678.D	09/18/18 10:49
Cal Standard	Y8I1906-CAL4	V728679.D	09/18/18 12:01
Cal Standard	Y8I1906-CAL5	V728680.D	09/18/18 12:32
Cal Standard	Y8I1906-CAL6	V728681.D	09/18/18 13:04
Cal Standard	Y8I1906-CAL7	V728682.D	09/18/18 13:36
Cal Standard	Y8I1906-CAL8	V728683.D	09/18/18 14:08
Cal Standard	Y8I1906-CAL9	V728684.D	09/18/18 14:40
Secondary Cal Check	Y8I1906-SCV1	V728686.D	09/18/18 15:43

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Sequence:	Y8K0116	Instrument:	MSVOA7
		Calibration:	YI80021

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y8K0116-TUN1	V729627.D	10/31/18 09:40
Calibration Check	Y8K0116-CCV1	V729628.D	10/31/18 10:13
LCS	BJ81730-BS1	V729629.D	10/31/18 10:49
LCS Dup	BJ81730-BSD1	V729630.D	10/31/18 11:21
Blank	BJ81730-BLK1	V729632.D	10/31/18 12:24
MW16_102518	18J1263-01	V729639.D	10/31/18 16:06
MW16_102518	BJ81730-MS1	V729640.D	10/31/18 16:38
MW16_102518	BJ81730-MSD1	V729641.D	10/31/18 17:10
MW5_102518	18J1263-02	V729643.D	10/31/18 18:13
MW7_102518	18J1263-03	V729644.D	10/31/18 18:45
MW14_102518	18J1263-04	V729645.D	10/31/18 19:16
MW13_102518	18J1263-05	V729646.D	10/31/18 19:48
MW12_102518	18J1263-06	V729647.D	10/31/18 20:19
MW15_102518	18J1263-07	V729648.D	10/31/18 20:51
DUP01_102518	18J1263-08	V729649.D	10/31/18 21:23

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Sequence:	Y8K0121	Instrument:	MSVOA7
		Calibration:	YI80021

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	Y8K0121-TUN1	V729650.D	11/01/18 09:40
Calibration Check	Y8K0121-CCV1	V729651.D	11/01/18 10:12
LCS	BK80021-BS1	V729652.D	11/01/18 10:44
LCS Dup	BK80021-BSD1	V729653.D	11/01/18 11:16
Blank	BK80021-BLK1	V729654.D	11/01/18 11:47
TB01_102518	18J1263-09	V729656.D	11/01/18 12:51
FB01_102518	18J1263-10	V729657.D	11/01/18 13:23

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**
EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC) Project: 170264501
Sequence: Y8I1906 Instrument: MSVOA7
Calibration: YI80021

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (Y8I1906-CAL1)			Lab File ID: V728676.D			Analyzed: 09/18/18 09:45			
ISTD: Fluorobenzene	92080	5.959	113245	5.959	81	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	336853	9.003	376485	9.003	89	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	122470	12.002	134431	11.999	91	50 - 200	0.0030	+/-0.17	
Cal Standard (Y8I1906-CAL2)			Lab File ID: V728677.D			Analyzed: 09/18/18 10:17			
ISTD: Fluorobenzene	92184	5.962	113245	5.959	81	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	333447	9.005	376485	9.003	89	50 - 200	0.0020	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	121133	12.002	134431	11.999	90	50 - 200	0.0030	+/-0.17	
Cal Standard (Y8I1906-CAL3)			Lab File ID: V728678.D			Analyzed: 09/18/18 10:49			
ISTD: Fluorobenzene	92448	5.962	113245	5.959	82	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	333527	9.005	376485	9.003	89	50 - 200	0.0020	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	121766	12.002	134431	11.999	91	50 - 200	0.0030	+/-0.17	
Cal Standard (Y8I1906-CAL4)			Lab File ID: V728679.D			Analyzed: 09/18/18 12:01			
ISTD: Fluorobenzene	113245	5.959	113245	5.959	100	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	376485	9.003	376485	9.003	100	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	134431	11.999	134431	11.999	100	50 - 200	0.0000	+/-0.17	
Cal Standard (Y8I1906-CAL5)			Lab File ID: V728680.D			Analyzed: 09/18/18 12:32			
ISTD: Fluorobenzene	102664	5.962	113245	5.959	91	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	361085	9.005	376485	9.003	96	50 - 200	0.0020	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	130788	12.002	134431	11.999	97	50 - 200	0.0030	+/-0.17	
Cal Standard (Y8I1906-CAL6)			Lab File ID: V728681.D			Analyzed: 09/18/18 13:04			
ISTD: Fluorobenzene	105204	5.962	113245	5.959	93	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	369793	9.005	376485	9.003	98	50 - 200	0.0020	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	135049	12.002	134431	11.999	100	50 - 200	0.0030	+/-0.17	
Cal Standard (Y8I1906-CAL7)			Lab File ID: V728682.D			Analyzed: 09/18/18 13:36			
ISTD: Fluorobenzene	104536	5.962	113245	5.959	92	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	361286	9.005	376485	9.003	96	50 - 200	0.0020	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	135967	12.002	134431	11.999	101	50 - 200	0.0030	+/-0.17	
Cal Standard (Y8I1906-CAL8)			Lab File ID: V728683.D			Analyzed: 09/18/18 14:08			
ISTD: Fluorobenzene	107751	5.962	113245	5.959	95	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	368906	9.005	376485	9.003	98	50 - 200	0.0020	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	138007	12.002	134431	11.999	103	50 - 200	0.0030	+/-0.17	
Cal Standard (Y8I1906-CAL9)			Lab File ID: V728684.D			Analyzed: 09/18/18 14:40			
ISTD: Fluorobenzene	107748	5.962	113245	5.959	95	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	369600	9.005	376485	9.003	98	50 - 200	0.0020	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	138653	12.005	134431	11.999	103	50 - 200	0.0060	+/-0.17	

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**
EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Sequence:	Y8I1906	Instrument:	MSVOA7
		Calibration:	YI80021

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (Y8I1906-SCV1)			Lab File ID: V728686.D			Analyzed: 09/18/18 15:43			
ISTD: Fluorobenzene	99820	5.959	113245	5.959	88	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	353493	9.005	376485	9.003	94	50 - 200	0.0020	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	128603	11.999	134431	11.999	96	50 - 200	0.0000	+/-0.17	

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**
EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC) Project: 170264501
Sequence: Y8K0116 Instrument: MSVOA7
Calibration: YI80021

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (Y8K0116-CCV1)			Lab File ID: V729628.D			Analyzed: 10/31/18 10:13			
ISTD: Fluorobenzene	65709	5.956				50 - 200		+/-0.17	
ISTD: Chlorobenzene-d5	252406	9				50 - 200		+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	100688	11.996				50 - 200		+/-0.17	
LCS (BJ81730-BS1)			Lab File ID: V729629.D			Analyzed: 10/31/18 10:49			
ISTD: Fluorobenzene	67567	5.959	65709	5.956	103	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	257396	9	252406	9	102	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	103547	11.996	100688	11.996	103	50 - 200	0.0000	+/-0.17	
LCS Dup (BJ81730-BSD1)			Lab File ID: V729630.D			Analyzed: 10/31/18 11:21			
ISTD: Fluorobenzene	68849	5.959	65709	5.956	105	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	262072	9	252406	9	104	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	103162	11.996	100688	11.996	102	50 - 200	0.0000	+/-0.17	
Blank (BJ81730-BLK1)			Lab File ID: V729632.D			Analyzed: 10/31/18 12:24			
ISTD: Fluorobenzene	63370	5.959	65709	5.956	96	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	243950	9	252406	9	97	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	87820	11.996	100688	11.996	87	50 - 200	0.0000	+/-0.17	
MW16_102518 (18J1263-01)			Lab File ID: V729639.D			Analyzed: 10/31/18 16:06			
ISTD: Fluorobenzene	58802	5.959	65709	5.956	89	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	225938	9	252406	9	90	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	78002	11.996	100688	11.996	77	50 - 200	0.0000	+/-0.17	
Matrix Spike (BJ81730-MS1)			Lab File ID: V729640.D			Analyzed: 10/31/18 16:38			
ISTD: Fluorobenzene	63299	5.956	65709	5.956	96	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	241114	9	252406	9	96	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	94665	11.996	100688	11.996	94	50 - 200	0.0000	+/-0.17	
Matrix Spike Dup (BJ81730-MSD1)			Lab File ID: V729641.D			Analyzed: 10/31/18 17:10			
ISTD: Fluorobenzene	65200	5.959	65709	5.956	99	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	250772	9	252406	9	99	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	96372	11.996	100688	11.996	96	50 - 200	0.0000	+/-0.17	
MW5_102518 (18J1263-02)			Lab File ID: V729643.D			Analyzed: 10/31/18 18:13			
ISTD: Fluorobenzene	62523	5.956	65709	5.956	95	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	239979	9	252406	9	95	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	83937	11.996	100688	11.996	83	50 - 200	0.0000	+/-0.17	
MW7_102518 (18J1263-03)			Lab File ID: V729644.D			Analyzed: 10/31/18 18:45			
ISTD: Fluorobenzene	61223	5.959	65709	5.956	93	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	244616	9.003	252406	9	97	50 - 200	0.0030	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	85429	11.996	100688	11.996	85	50 - 200	0.0000	+/-0.17	

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**
EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC) Project: 170264501
Sequence: Y8K0116 Instrument: MSVOA7
Calibration: YI80021

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW14_102518 (18J1263-04)			Lab File ID: V729645.D			Analyzed: 10/31/18 19:16			
ISTD: Fluorobenzene	62599	5.959	65709	5.956	95	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	239322	9	252406	9	95	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	84326	11.996	100688	11.996	84	50 - 200	0.0000	+/-0.17	
MW13_102518 (18J1263-05)			Lab File ID: V729646.D			Analyzed: 10/31/18 19:48			
ISTD: Fluorobenzene	62491	5.959	65709	5.956	95	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	238842	9	252406	9	95	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	86624	11.996	100688	11.996	86	50 - 200	0.0000	+/-0.17	
MW12_102518 (18J1263-06)			Lab File ID: V729647.D			Analyzed: 10/31/18 20:19			
ISTD: Fluorobenzene	58024	5.959	65709	5.956	88	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	224113	9	252406	9	89	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	77557	11.996	100688	11.996	77	50 - 200	0.0000	+/-0.17	
MW15_102518 (18J1263-07)			Lab File ID: V729648.D			Analyzed: 10/31/18 20:51			
ISTD: Fluorobenzene	58975	5.959	65709	5.956	90	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	231575	9	252406	9	92	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	79416	11.996	100688	11.996	79	50 - 200	0.0000	+/-0.17	
DUP01_102518 (18J1263-08)			Lab File ID: V729649.D			Analyzed: 10/31/18 21:23			
ISTD: Fluorobenzene	58506	5.959	65709	5.956	89	50 - 200	0.0030	+/-0.17	
ISTD: Chlorobenzene-d5	227330	9	252406	9	90	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	79429	11.996	100688	11.996	79	50 - 200	0.0000	+/-0.17	

FORM VIII **INTERNAL STANDARD AREA AND RT SUMMARY**
EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC) Project: 170264501
Sequence: Y8K0121 Instrument: MSVOA7
Calibration: YI80021

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (Y8K0121-CCV1)			Lab File ID: V729651.D			Analyzed: 11/01/18 10:12			
ISTD: Fluorobenzene	64026	5.959				50 - 200		+/-0.17	
ISTD: Chlorobenzene-d5	245464	9				50 - 200		+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	100160	11.996				50 - 200		+/-0.17	
LCS (BK80021-BS1)			Lab File ID: V729652.D			Analyzed: 11/01/18 10:44			
ISTD: Fluorobenzene	66467	5.959	64026	5.959	104	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	254339	9	245464	9	104	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	100365	11.996	100160	11.996	100	50 - 200	0.0000	+/-0.17	
LCS Dup (BK80021-BSD1)			Lab File ID: V729653.D			Analyzed: 11/01/18 11:16			
ISTD: Fluorobenzene	68134	5.959	64026	5.959	106	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	256669	9	245464	9	105	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	102346	11.996	100160	11.996	102	50 - 200	0.0000	+/-0.17	
Blank (BK80021-BLK1)			Lab File ID: V729654.D			Analyzed: 11/01/18 11:47			
ISTD: Fluorobenzene	64623	5.959	64026	5.959	101	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	242754	9	245464	9	99	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	86219	11.996	100160	11.996	86	50 - 200	0.0000	+/-0.17	
TB01_102518 (18J1263-09)			Lab File ID: V729656.D			Analyzed: 11/01/18 12:51			
ISTD: Fluorobenzene	62467	5.959	64026	5.959	98	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	240807	9	245464	9	98	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	87367	11.996	100160	11.996	87	50 - 200	0.0000	+/-0.17	
FB01_102518 (18J1263-10)			Lab File ID: V729657.D			Analyzed: 11/01/18 13:23			
ISTD: Fluorobenzene	61750	5.959	64026	5.959	96	50 - 200	0.0000	+/-0.17	
ISTD: Chlorobenzene-d5	239741	9	245464	9	98	50 - 200	0.0000	+/-0.17	
ISTD: 1,2-Dichlorobenzene-d4	87245	11.996	100160	11.996	87	50 - 200	0.0000	+/-0.17	

HOLDING TIME SUMMARY

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
MW16_102518	10/25/18 09:20	10/25/18 20:09	10/31/18 07:30	5.92	14.00	10/31/18 16:06	6.28	14.00	
MW5_102518	10/25/18 15:55	10/25/18 20:09	10/31/18 07:30	5.65	14.00	10/31/18 18:13	6.10	14.00	
MW7_102518	10/25/18 16:05	10/25/18 20:09	10/31/18 07:30	5.64	14.00	10/31/18 18:45	6.11	14.00	
MW14_102518	10/25/18 14:45	10/25/18 20:09	10/31/18 07:30	5.70	14.00	10/31/18 19:16	6.19	14.00	
MW13_102518	10/25/18 15:10	10/25/18 20:09	10/31/18 07:30	5.68	14.00	10/31/18 19:48	6.19	14.00	
MW12_102518	10/25/18 15:20	10/25/18 20:09	10/31/18 07:30	5.67	14.00	10/31/18 20:19	6.21	14.00	
MW15_102518	10/25/18 15:35	10/25/18 20:09	10/31/18 07:30	5.66	14.00	10/31/18 20:51	6.22	14.00	
DUP01_102518	10/25/18 00:00	10/25/18 20:09	10/31/18 07:30	6.31	14.00	10/31/18 21:23	6.89	14.00	
TB01_102518	10/25/18 16:20	10/25/18 20:09	11/01/18 07:30	6.63	14.00	11/01/18 12:51	6.85	14.00	
FB01_102518	10/25/18 07:15	10/25/18 20:09	11/01/18 07:30	7.01	14.00	11/01/18 13:23	7.26	14.00	

METHOD DETECTION AND REPORTING LIMITS

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. **SDG:** 18J1263

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170264501

Matrix: Water **Instrument:** MSVOA7

Analyte	LOD	LOQ	Units
1,1,1-Trichloroethane	0.200	0.500	ug/L
1,1-Dichloroethane	0.200	0.500	ug/L
1,1-Dichloroethylene	0.200	0.500	ug/L
1,2,4-Trimethylbenzene	0.200	0.500	ug/L
1,2-Dichlorobenzene	0.200	0.500	ug/L
1,2-Dichloroethane	0.200	0.500	ug/L
1,3,5-Trimethylbenzene	0.200	0.500	ug/L
1,3-Dichlorobenzene	0.200	0.500	ug/L
1,4-Dichlorobenzene	0.200	0.500	ug/L
1,4-Dioxane	40.0	80.0	ug/L
2-Butanone	0.200	0.500	ug/L
Acetone	1.00	2.00	ug/L
Benzene	0.200	0.500	ug/L
Carbon tetrachloride	0.200	0.500	ug/L
Chlorobenzene	0.200	0.500	ug/L
Chloroform	0.200	0.500	ug/L
cis-1,2-Dichloroethylene	0.200	0.500	ug/L
Ethyl Benzene	0.200	0.500	ug/L
Methyl tert-butyl ether (MTBE)	0.200	0.500	ug/L
Methylene chloride	1.00	2.00	ug/L
Naphthalene	1.00	2.00	ug/L
n-Butylbenzene	0.200	0.500	ug/L
n-Propylbenzene	0.200	0.500	ug/L
o-Xylene	0.200	0.500	ug/L
p- & m- Xylenes	0.500	1.00	ug/L
sec-Butylbenzene	0.200	0.500	ug/L
tert-Butylbenzene	0.200	0.500	ug/L
Tetrachloroethylene	0.200	0.500	ug/L
Toluene	0.200	0.500	ug/L
trans-1,2-Dichloroethylene	0.200	0.500	ug/L
Trichloroethylene	0.200	0.500	ug/L
Vinyl Chloride	0.200	0.500	ug/L
Xylenes, Total	0.600	1.50	ug/L

FORM I **ORGANIC ANALYSIS DATA SHEET**

EPA 8260C

MW16_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-01 File ID: V729639.D

Sampled: 10/25/18 09:20 Prepared: 10/31/18 07:30 Analyzed: 10/31/18 16:06

Solids: Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

Batch: BJ81730 Sequence: Y8K0116 Calibration: YI80021 Instrument: MSVOA7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.00	U
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.500	U
156-59-2	cis-1,2-Dichloroethylene	1	14.8	
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	7.96	
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.500	U
79-01-6	Trichloroethylene	1	2.30	
75-01-4	Vinyl Chloride	1	3.56	
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.7	107	69 - 130	
SURR: Toluene-d8	10.0	9.48	94.8	81 - 117	
SURR: p-Bromofluorobenzene	10.0	10.1	101	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	58802	5.959	65709	5.956	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW16_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-01	File ID:	V729639.D
Sampled:	10/25/18 09:20	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 16:06
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	225938	9	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	78002	11.996	100688	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729639.D
Acq On : 31 Oct 2018 4:06 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-01
Misc : QBV7103118A 8260 M A
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 31 16:23:16 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

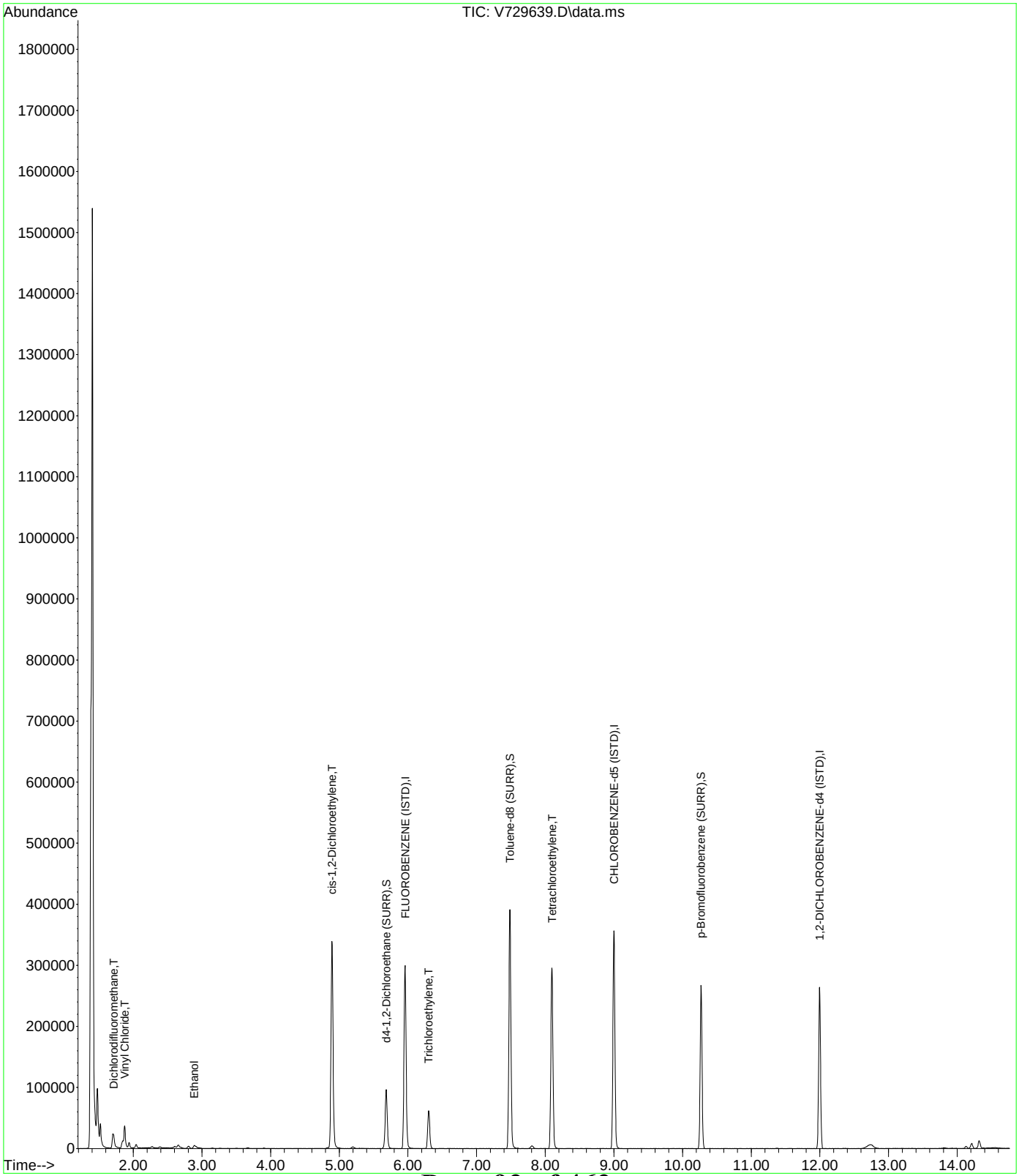
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	58802	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	225938	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	78002	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.684	65	68733	10.70	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 107.00%				
51) Toluene-d8 (SURR)	7.486	98	292984	9.48	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.80%				
70) p-Bromofluorobenzene (...	10.269	95	100706	10.08	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.80%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.716	85	1779	0.29	ppb		98
4) Vinyl Chloride	1.875	62	31195	3.56	ppb		100
8) Ethanol	2.885	45	2333	234.47	ppb	#	52
25) cis-1,2-Dichloroethylene	4.893	61	202373	14.84	ppb		89
41) Trichloroethylene	6.301	95	21998	2.30	ppb		97
56) Tetrachloroethylene	8.098	166	99137	7.96	ppb	#	100

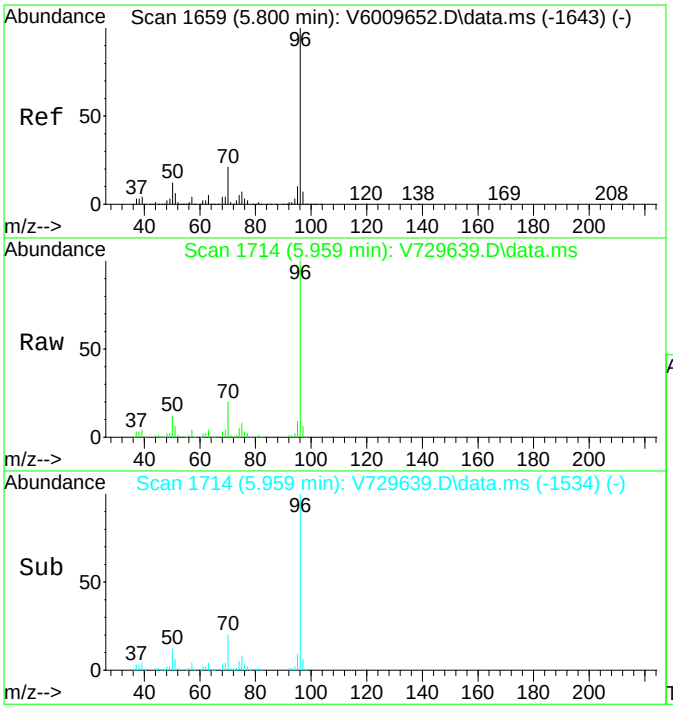
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729639.D
Acq On : 31 Oct 2018 4:06 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-01
Misc : QBV7103118A 8260 M A
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 31 16:23:16 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

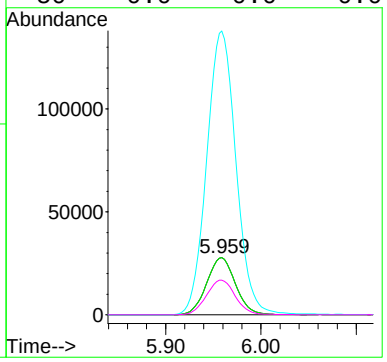


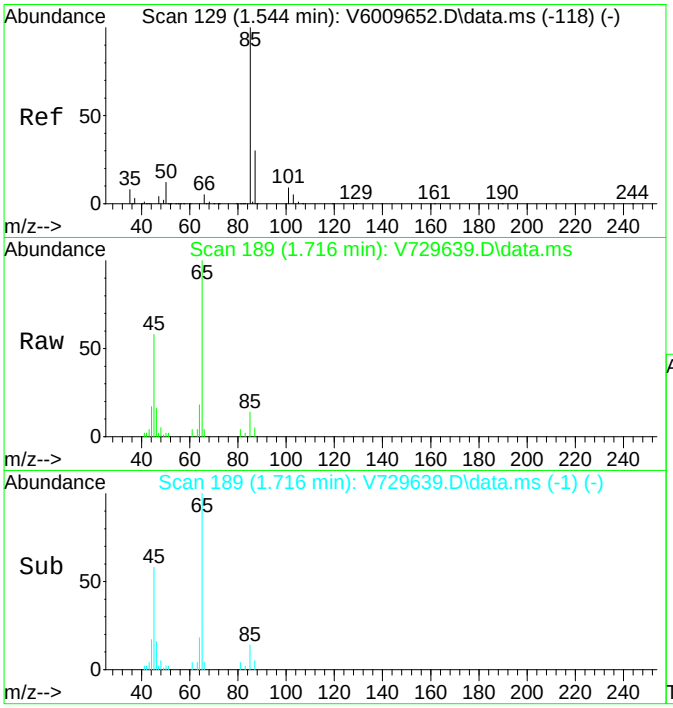


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 70 Resp: 58802

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	500.9	323.6	672.2
50	0.0	0.0	0.0

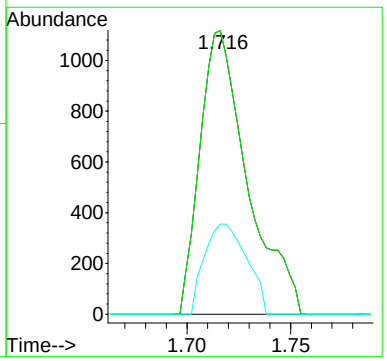


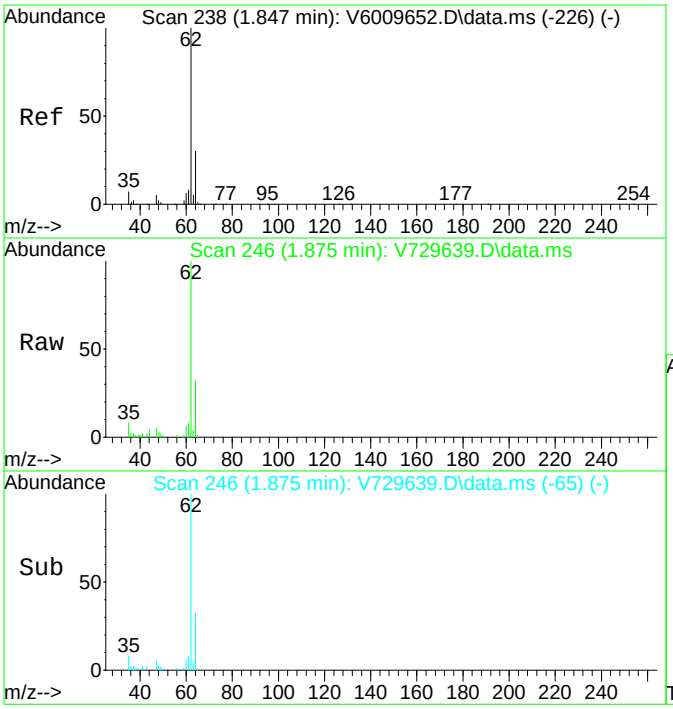


#2
Dichlorodifluoromethane
Concen: 0.29 ppb
RT: 1.716 min Scan# 189
Delta R.T. 0.161 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 85 Resp: 1779

Ion	Ratio	Lower	Upper
85	100		
85	100.0	65.0	135.0
87	28.4	21.1	43.9

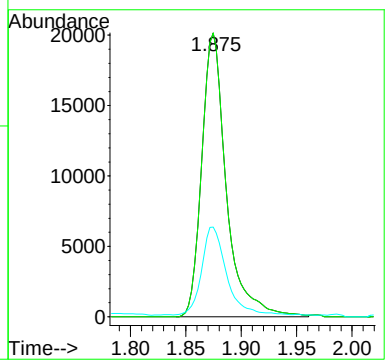


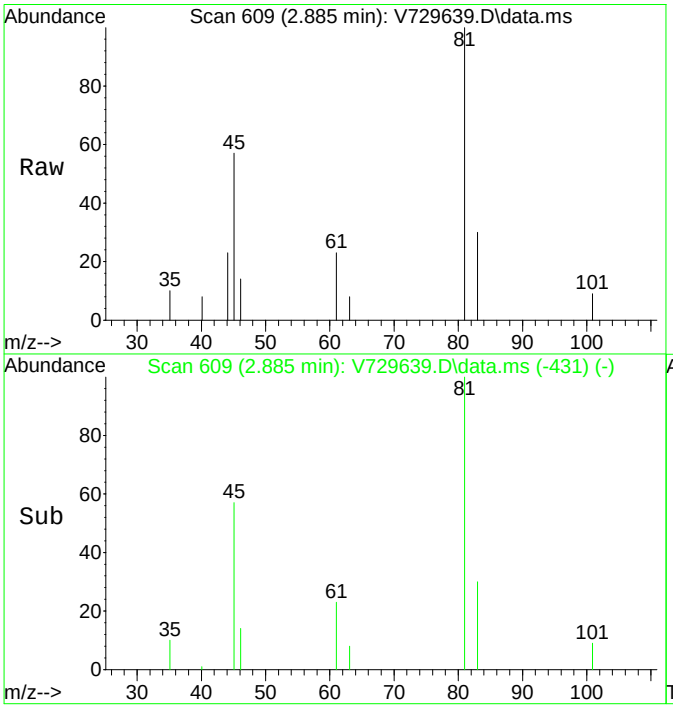


#4
Vinyl Chloride
Concen: 3.56 ppb
RT: 1.875 min Scan# 246
Delta R.T. 0.003 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 62 Resp: 31195

Ion	Ratio	Lower	Upper
62	100		
62	100.0	65.0	135.0
64	30.8	20.2	42.0

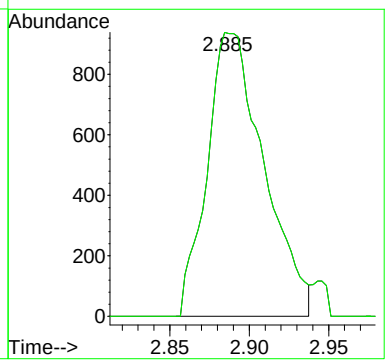


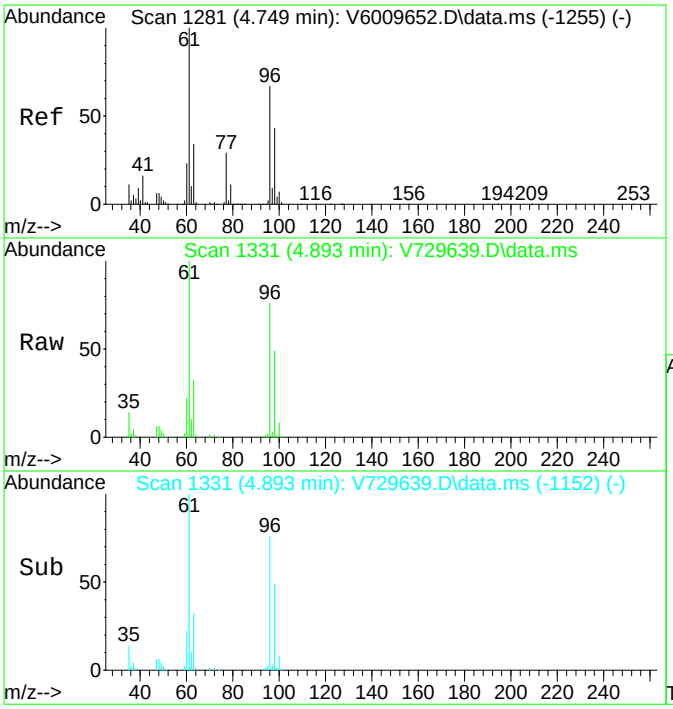


#8
Ethanol
Concen: 234.47 ppb
RT: 2.885 min Scan# 609
Delta R.T. -0.005 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 45 Resp: 2333

Ion	Ratio	Lower	Upper
45	100		
45	100.0	31.3	93.9#

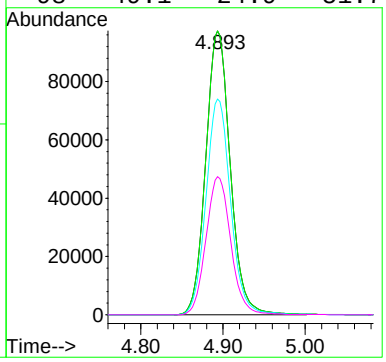


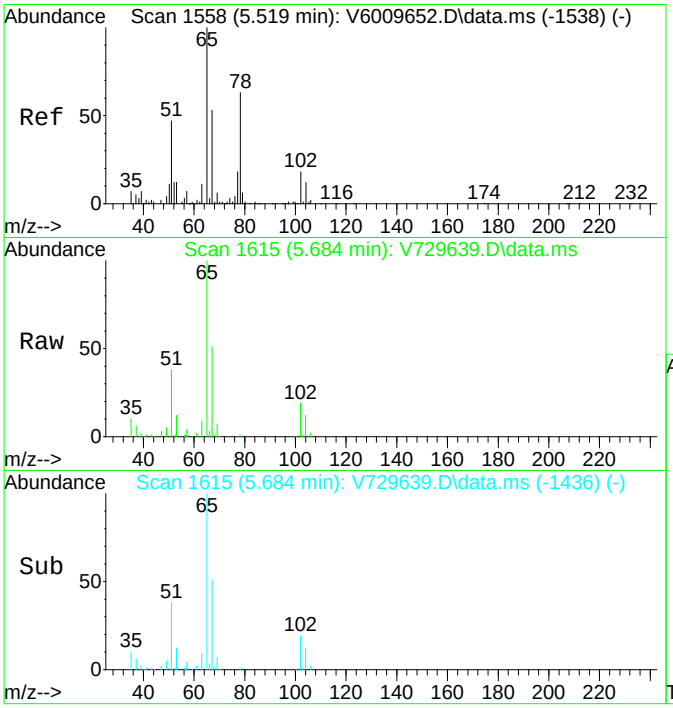


#25
cis-1,2-Dichloroethylene
Concen: 14.84 ppb
RT: 4.893 min Scan# 1331
Delta R.T. -0.003 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 61 Resp: 202373

Ion	Ratio	Lower	Upper
61	100		
61	100.0	65.0	135.0
96	76.3	37.8	78.4
98	49.1	24.9	51.7

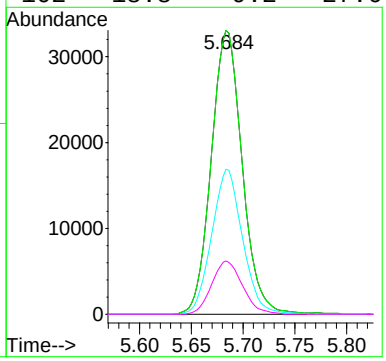


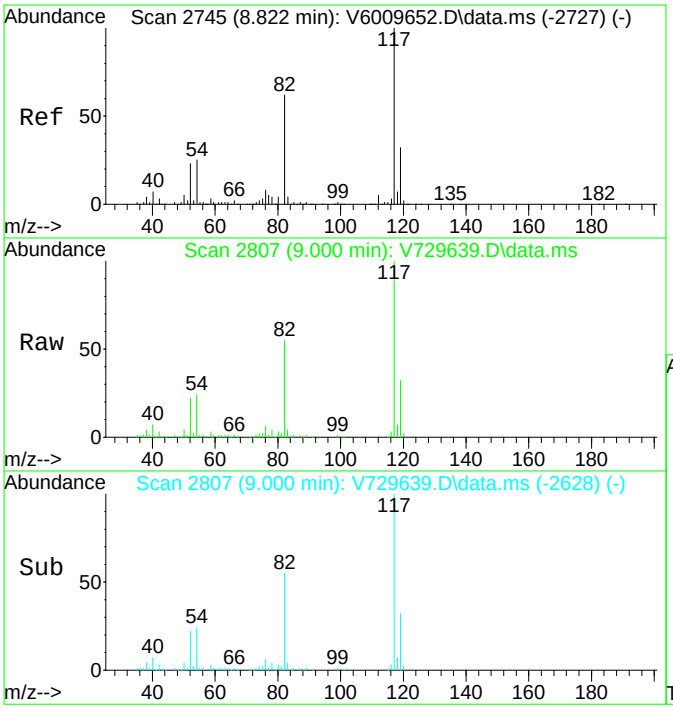


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.70 ppb
RT: 5.684 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 65 Resp: 68733

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.0	33.0	68.6
102	18.8	9.2	27.6

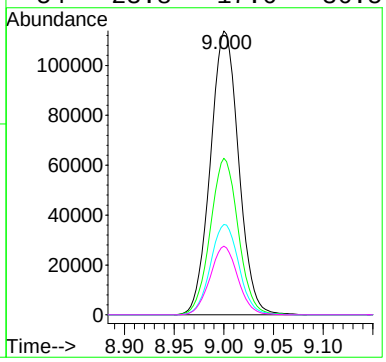


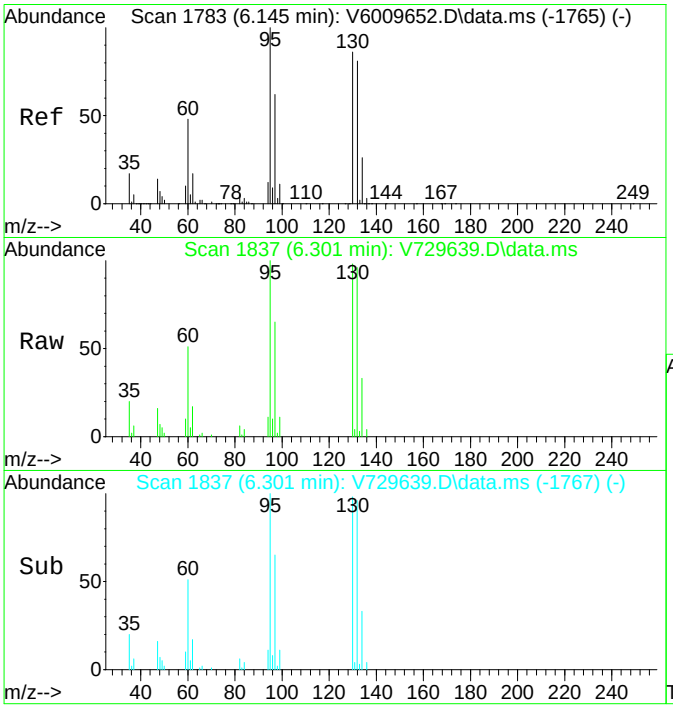


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion:117 Resp: 225938

Ion	Ratio	Lower	Upper
117	100		
82	54.5	35.9	74.7
119	32.0	20.8	43.2
54	23.8	17.6	36.5

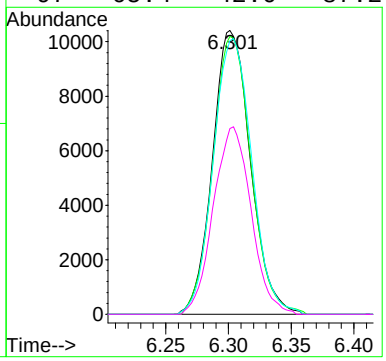


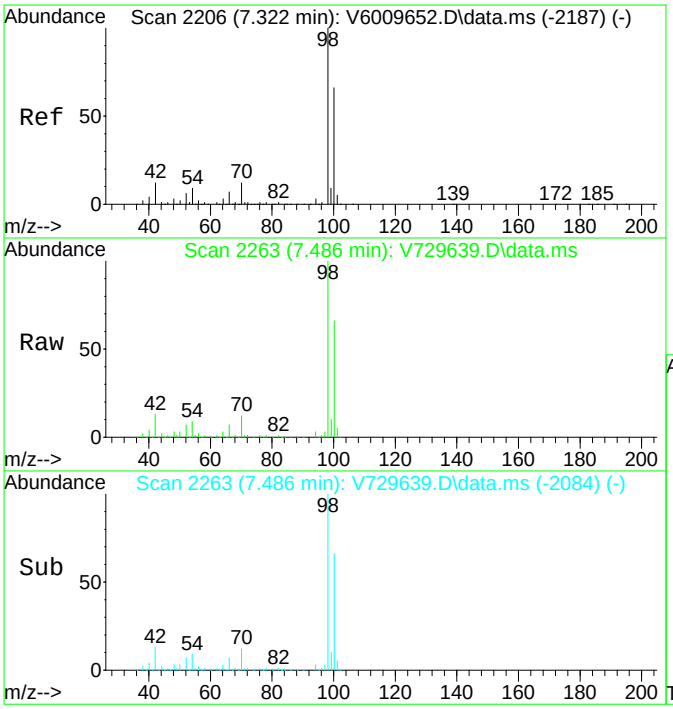


#41
Trichloroethylene
Concen: 2.30 ppb
RT: 6.301 min Scan# 1837
Delta R.T. -0.006 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 95 Resp: 21998

Ion	Ratio	Lower	Upper
95	100		
130	97.7	61.1	126.9
132	98.3	62.0	128.8
97	65.4	42.0	87.2

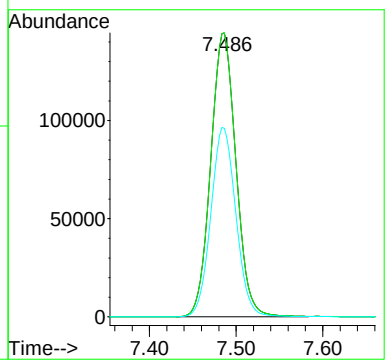


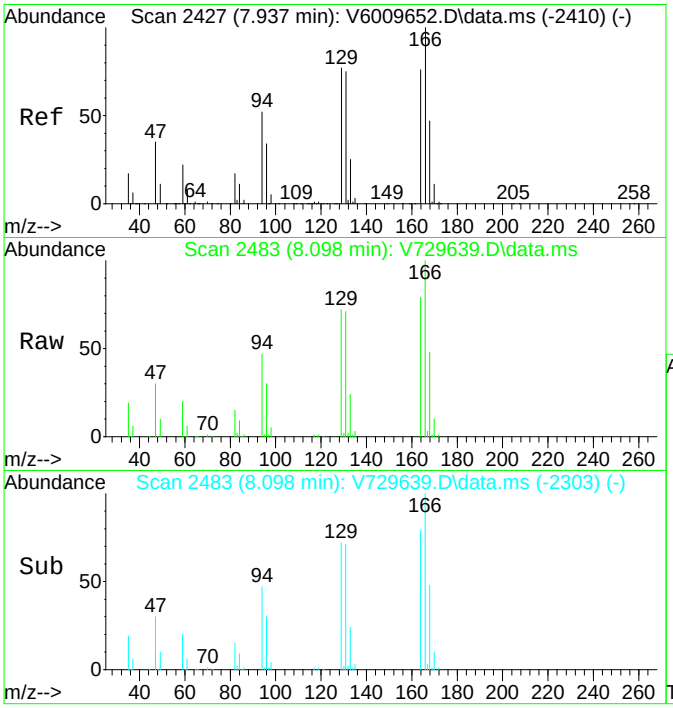


#51
Toluene-d8 (SURR)
Concen: 9.48 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 98 Resp: 292984

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	66.2	43.4	90.2

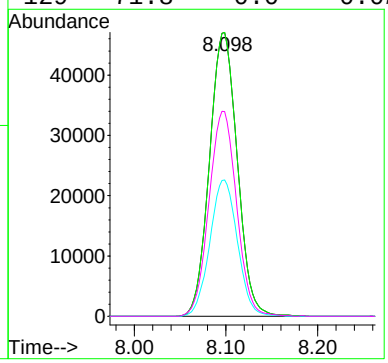


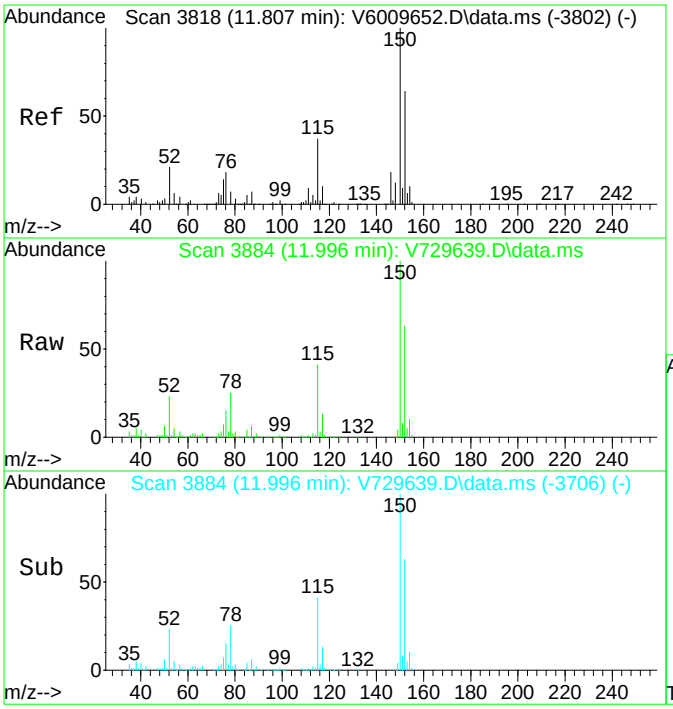


#56
Tetrachloroethylene
Concen: 7.96 ppb
RT: 8.098 min Scan# 2483
Delta R.T. 0.000 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion:166 Resp: 99137

Ion	Ratio	Lower	Upper
166	100		
166	100.0	65.0	135.0
168	0.0	0.0	0.0
129	71.8	0.0	0.0#

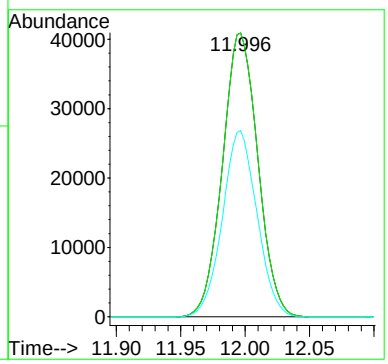


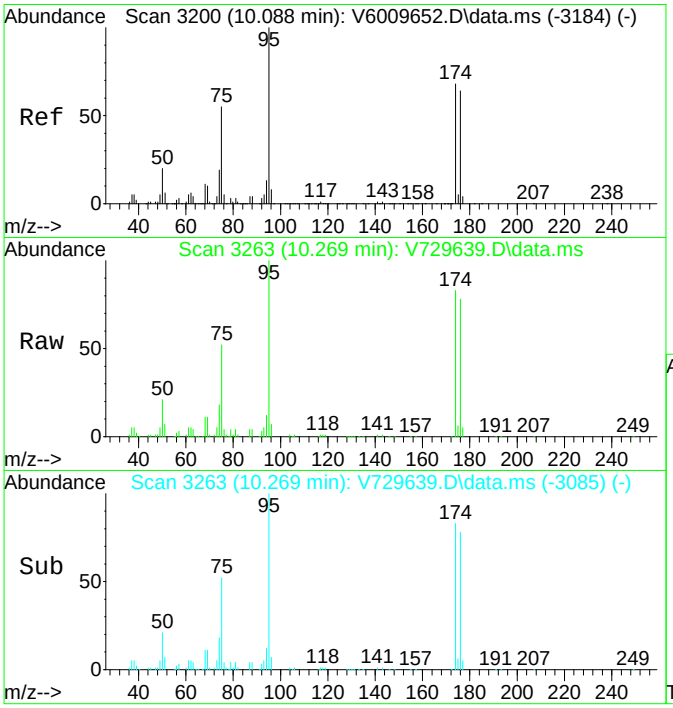


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion:152 Resp: 78002

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	64.2	33.7	101.0

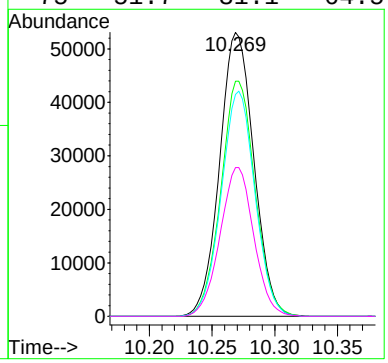




#70
p-Bromofluorobenzene (SURR)
Concen: 10.08 ppb
RT: 10.269 min Scan# 3263
Delta R.T. -0.006 min
Lab File: V729639.D
Acq: 31 Oct 2018 4:06 pm

Tgt Ion: 95 Resp: 100706

Ion	Ratio	Lower	Upper
95	100		
174	82.7	49.1	102.1
176	78.3	47.7	99.1
75	51.7	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW5_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-02 File ID: V729643.D

Sampled: 10/25/18 15:55 Prepared: 10/31/18 07:30 Analyzed: 10/31/18 18:13

Solids: Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

Batch: BJ81730 Sequence: Y8K0116 Calibration: YI80021 Instrument: MSVOA7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.00	U
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.270	J
156-59-2	cis-1,2-Dichloroethylene	1	0.500	U
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	7.29	
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.500	U
79-01-6	Trichloroethylene	1	0.500	U
75-01-4	Vinyl Chloride	1	0.500	U
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.8	108	69 - 130	
SURR: Toluene-d8	10.0	9.54	95.4	81 - 117	
SURR: p-Bromofluorobenzene	10.0	10.1	101	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	62523	5.956	65709	5.956	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW5_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-02	File ID:	V729643.D
Sampled:	10/25/18 15:55	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 18:13
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	239979	9	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	83937	11.996	100688	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729643.D
Acq On : 31 Oct 2018 6:13 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-02
Misc : QBV7103118A 8260 M A
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 01 12:42:33 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

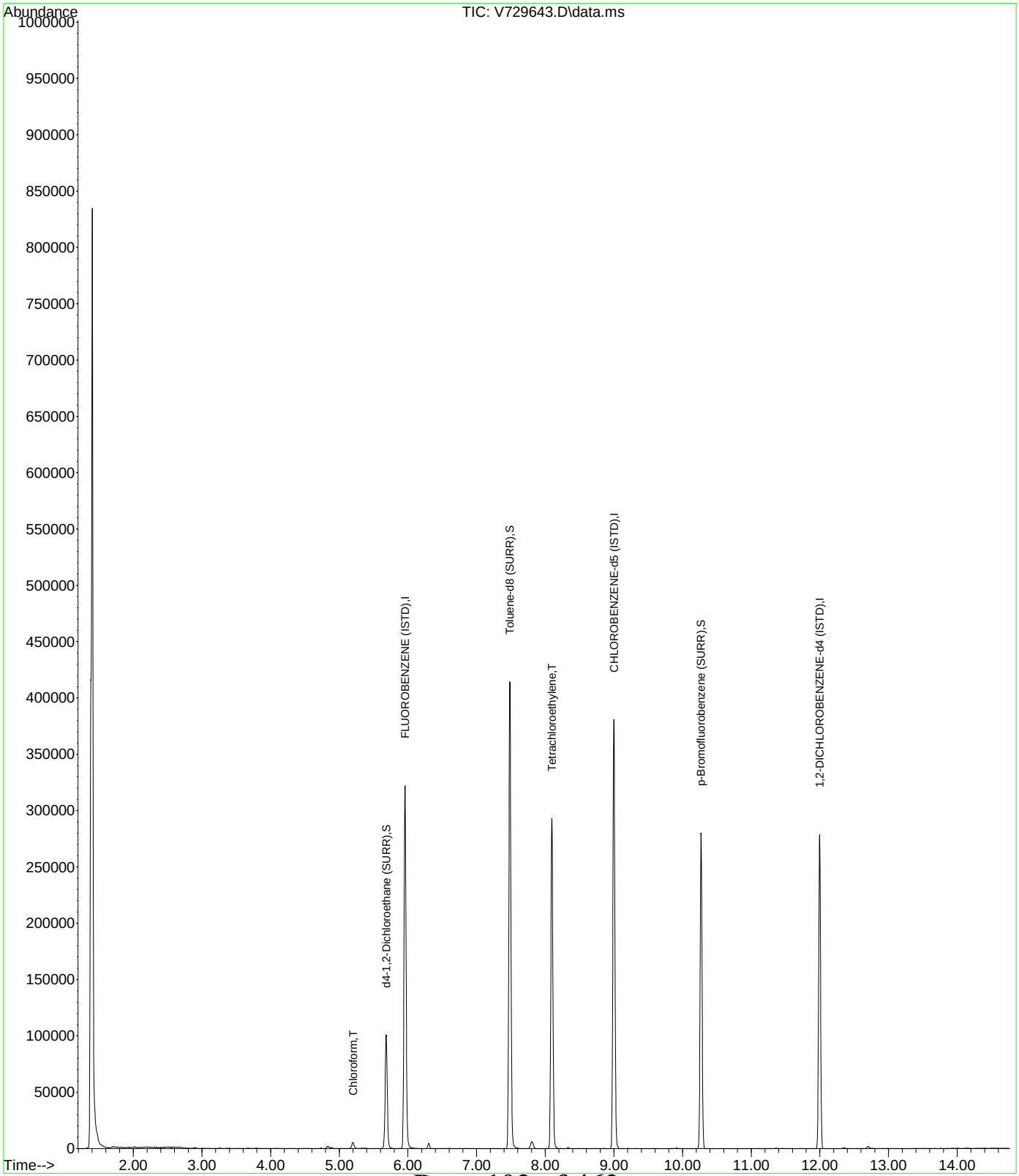
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) FLUOROBENZENE (ISTD)	5.956	70	62523	10.00	ppb	# 0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	239979	10.00	ppb	0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	83937	10.00	ppb	0.00
System Monitoring Compounds						
34) d4-1,2-Dichloroethane ...	5.684	65	73905	10.82	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 108.20%			
51) Toluene-d8 (SURR)	7.484	98	313254	9.54	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.40%			
70) p-Bromofluorobenzene (...	10.269	95	108692	10.11	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.10%			
Target Compounds						Qvalue
30) Chloroform	5.199	83	3971	0.27	ppb	# 98
56) Tetrachloroethylene	8.096	166	96405	7.29	ppb	# 100

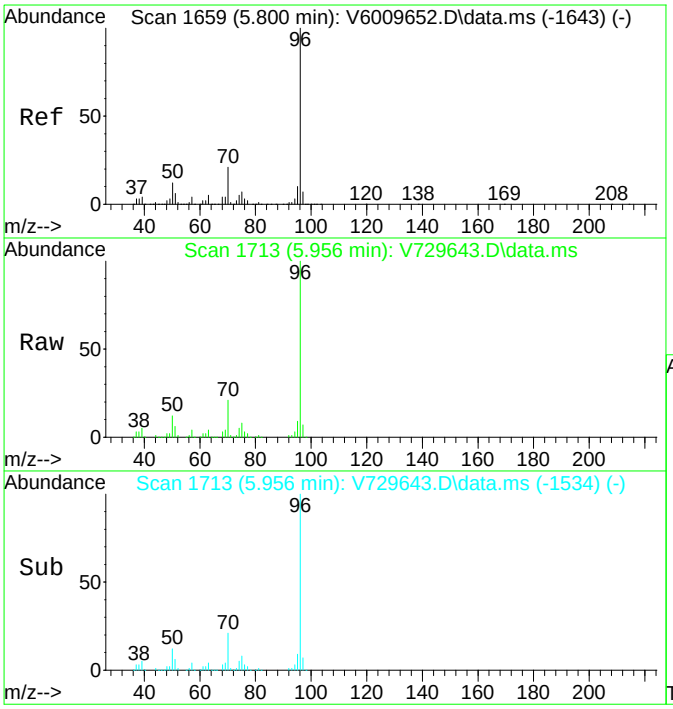
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729643.D
Acq On : 31 Oct 2018 6:13 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-02
Misc : QBV7103118A 8260 M A
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 01 12:42:33 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

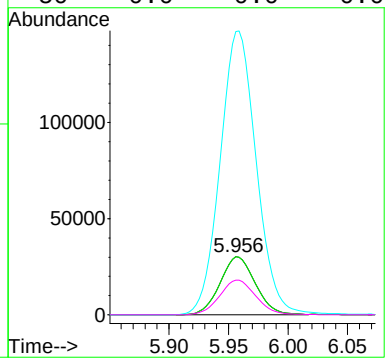


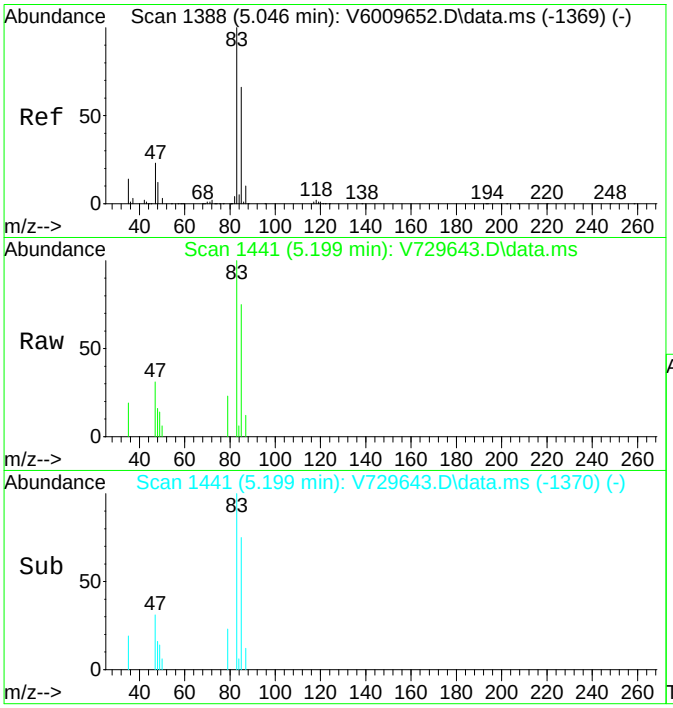


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.956 min Scan# 1713
Delta R.T. -0.003 min
Lab File: V729643.D
Acq: 31 Oct 2018 6:13 pm

Tgt Ion: 70 Resp: 62523

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	500.3	323.6	672.2
50	0.0	0.0	0.0

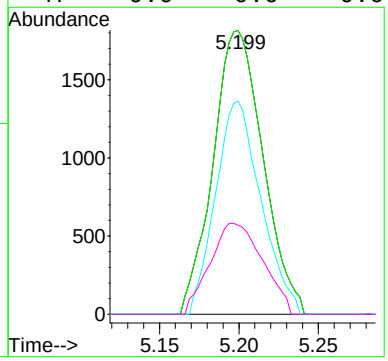


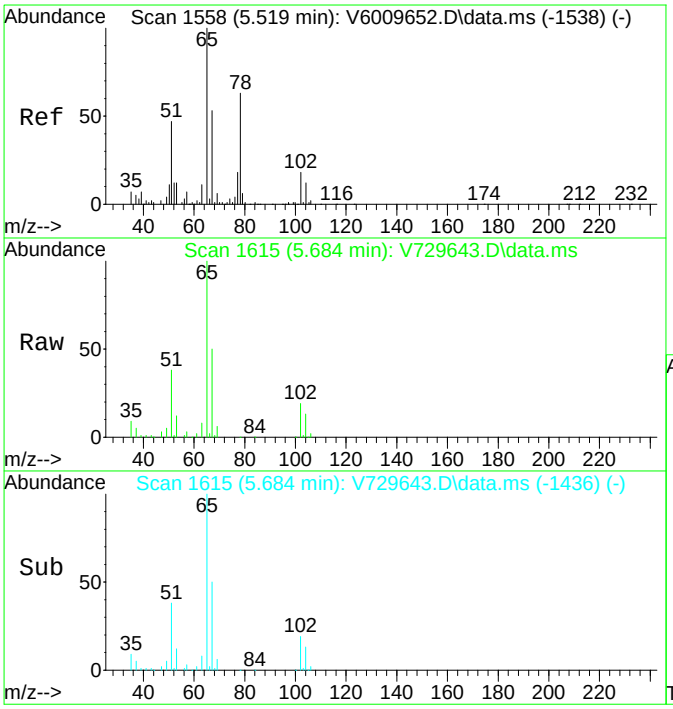


#30
Chloroform
Concen: 0.27 ppb
RT: 5.199 min Scan# 1441
Delta R.T. -0.003 min
Lab File: V729643.D
Acq: 31 Oct 2018 6:13 pm

Tgt Ion: 83 Resp: 3971

Ion	Ratio	Lower	Upper
83	100		
83	100.0	65.0	135.0
85	68.2	41.8	86.8
47	0.0	0.0	0.0

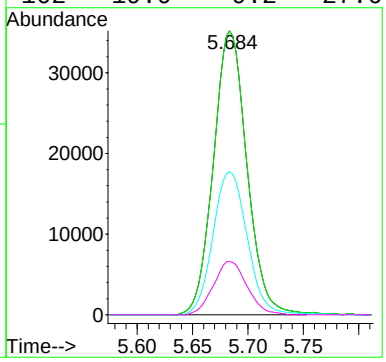


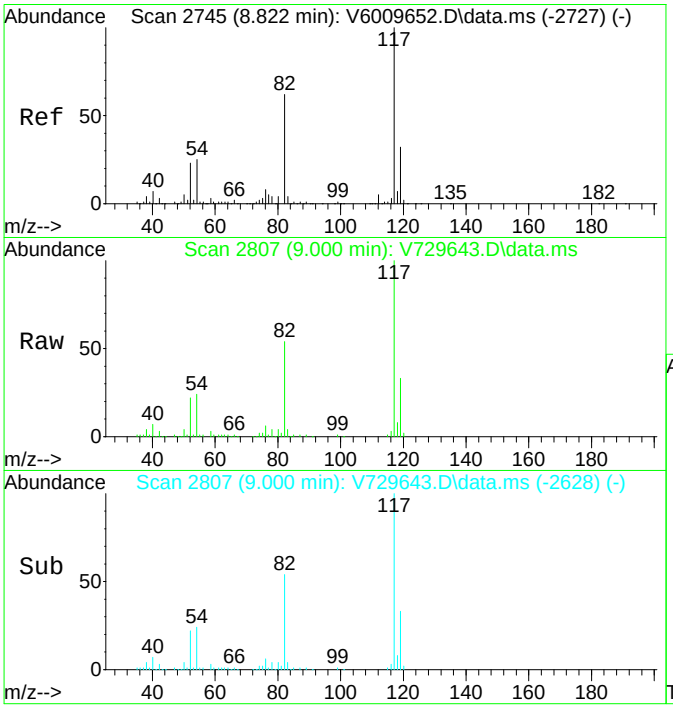


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.82 ppb
RT: 5.684 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729643.D
Acq: 31 Oct 2018 6:13 pm

Tgt Ion: 65 Resp: 73905

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.7	33.0	68.6
102	19.0	9.2	27.6

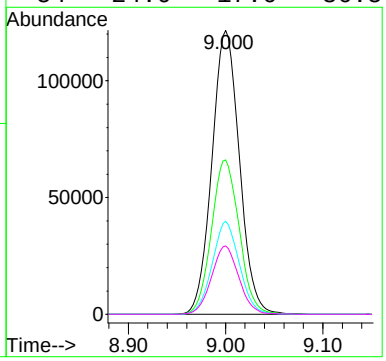


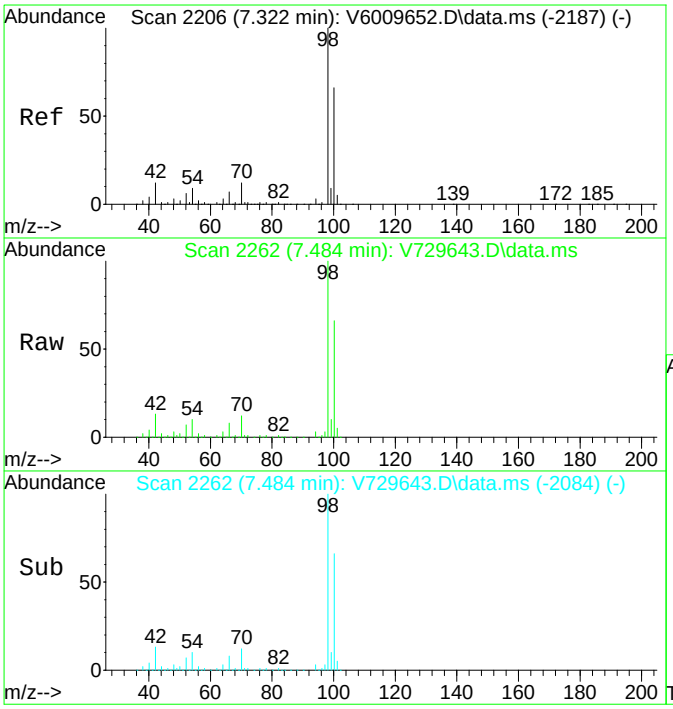


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729643.D
Acq: 31 Oct 2018 6:13 pm

Tgt Ion:117 Resp: 239979

Ion	Ratio	Lower	Upper
117	100		
82	54.8	35.9	74.7
119	32.3	20.8	43.2
54	24.0	17.6	36.5

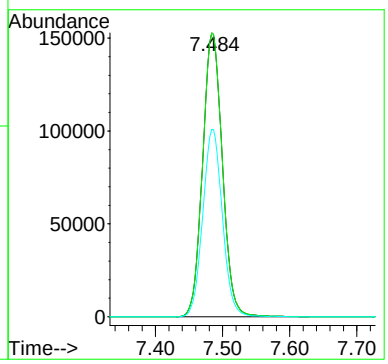


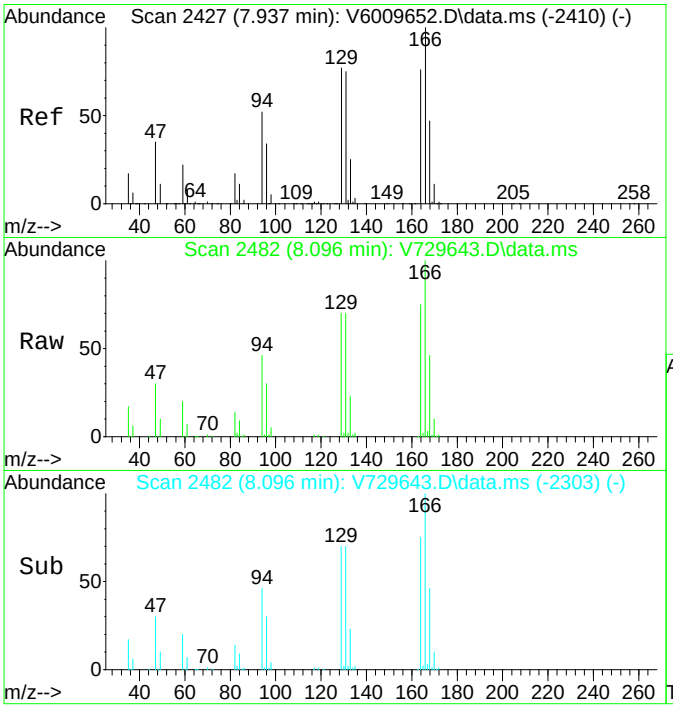


#51
Toluene-d8 (SURR)
Concen: 9.54 ppb
RT: 7.484 min Scan# 2262
Delta R.T. -0.006 min
Lab File: V729643.D
Acq: 31 Oct 2018 6:13 pm

Tgt Ion: 98 Resp: 313254

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	65.4	43.4	90.2

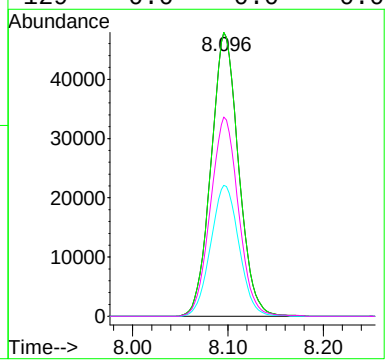


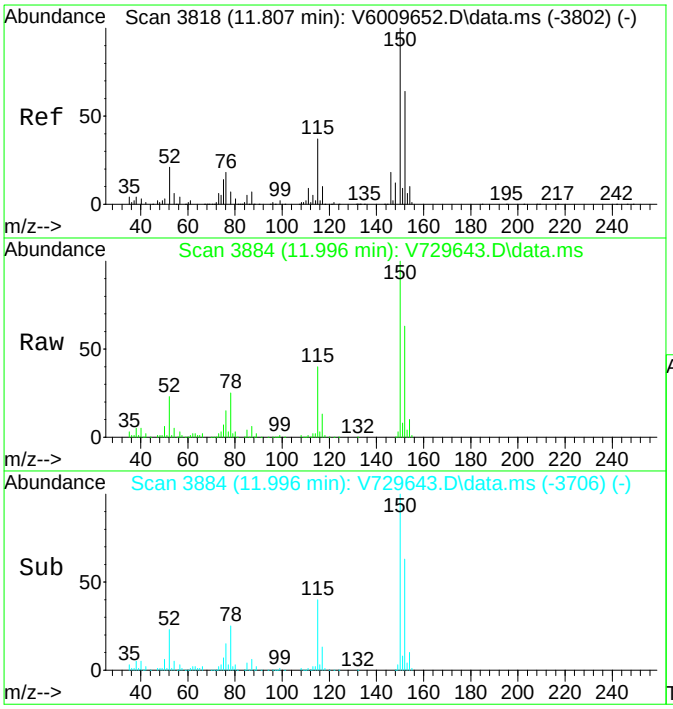


#56
Tetrachloroethylene
Concen: 7.29 ppb
RT: 8.096 min Scan# 2482
Delta R.T. -0.003 min
Lab File: V729643.D
Acq: 31 Oct 2018 6:13 pm

Tgt Ion:166 Resp: 96405

Ion	Ratio	Lower	Upper
166	100		
166	100.0	65.0	135.0
168	47.4	0.0	0.0#
129	0.0	0.0	0.0

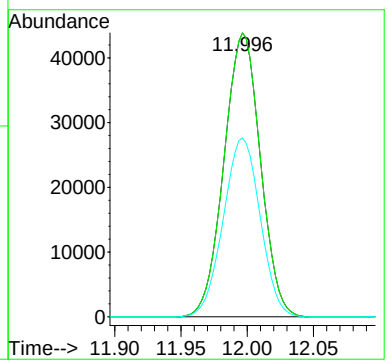


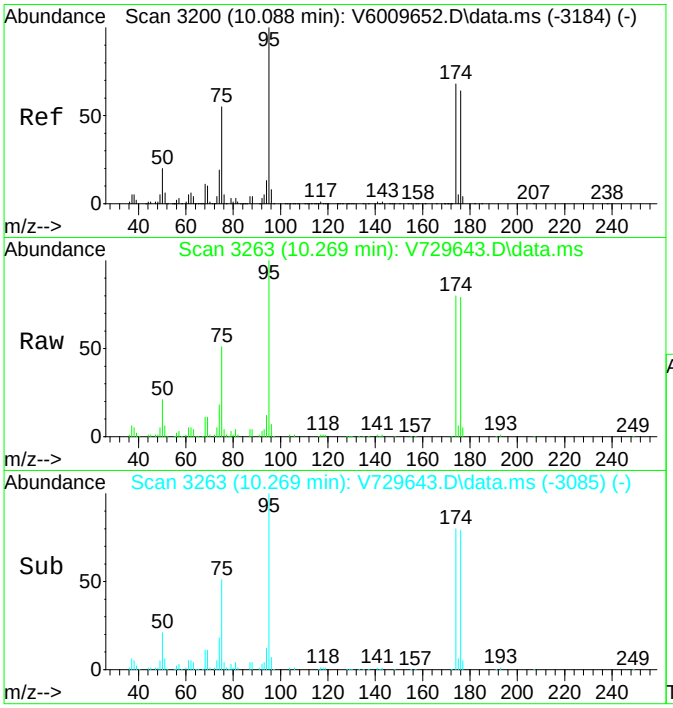


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729643.D
Acq: 31 Oct 2018 6:13 pm

Tgt Ion:152 Resp: 83937

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	63.8	33.7	101.0

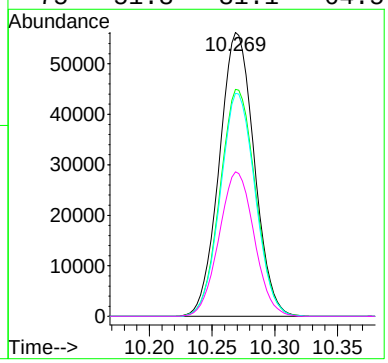




#70
p-Bromofluorobenzene (SURR)
Concen: 10.11 ppb
RT: 10.269 min Scan# 3263
Delta R.T. -0.006 min
Lab File: V729643.D
Acq: 31 Oct 2018 6:13 pm

Tgt Ion: 95 Resp: 108692

Ion	Ratio	Lower	Upper
95	100		
174	81.1	49.1	102.1
176	78.6	47.7	99.1
75	51.3	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW7_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-03	File ID:	V729644.D
Sampled:	10/25/18 16:05	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 18:45
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.00	U
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.270	J
156-59-2	cis-1,2-Dichloroethylene	1	0.500	U
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	23.3	
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.500	U
79-01-6	Trichloroethylene	1	0.490	J
75-01-4	Vinyl Chloride	1	0.500	U
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	11.3	113	69 - 130	
SURR: Toluene-d8	10.0	9.41	94.1	81 - 117	
SURR: p-Bromofluorobenzene	10.0	10.1	101	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	61223	5.959	65709	5.956	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW7_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-03	File ID:	V729644.D
Sampled:	10/25/18 16:05	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 18:45
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	244616	9.003	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	85429	11.996	100688	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729644.D
Acq On : 31 Oct 2018 6:45 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-03
Misc : QBV7103118A 8260 M A
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 01 12:43:15 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

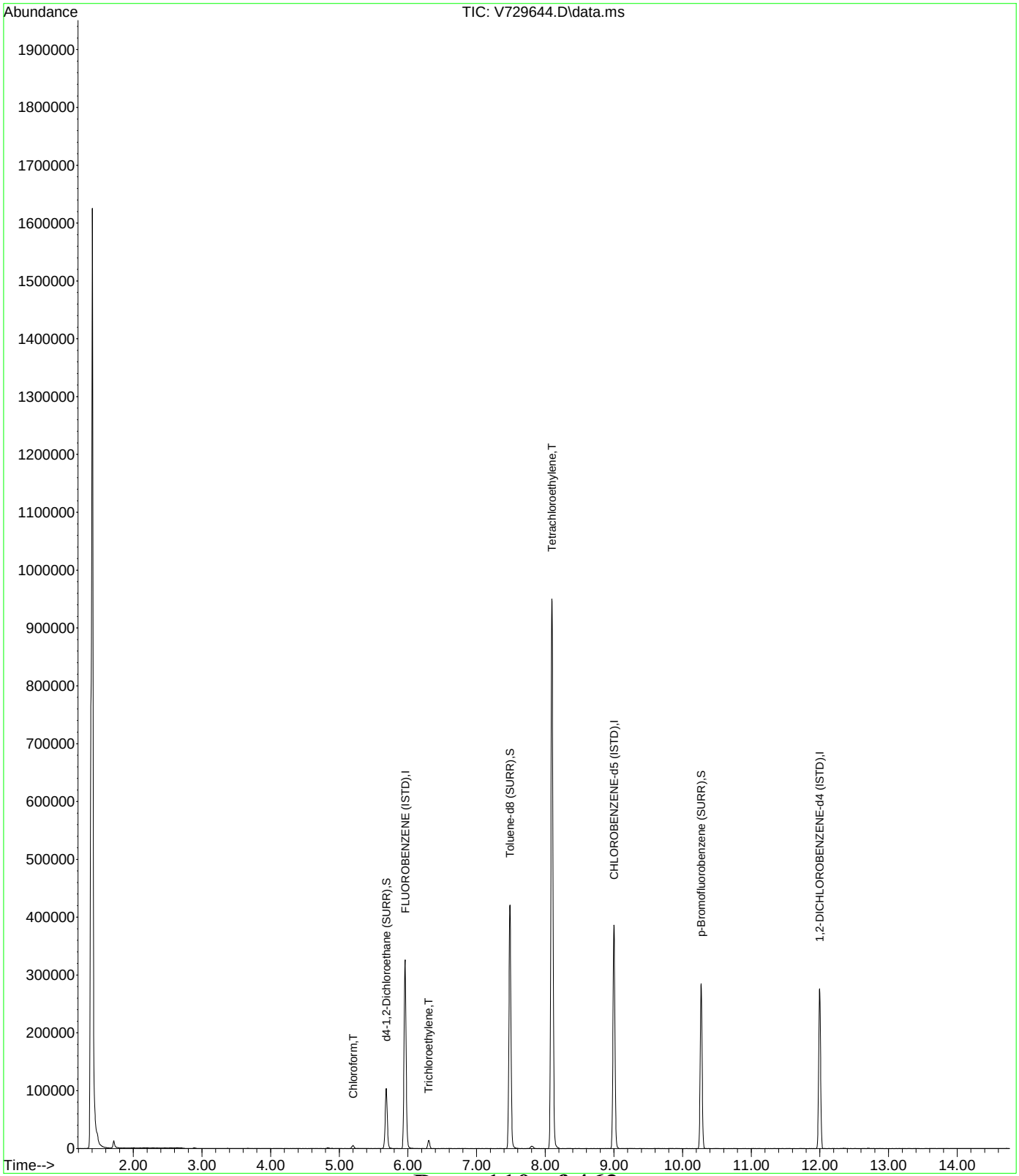
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) FLUOROBENZENE (ISTD)	5.959	70	61223	10.00	ppb	# 0.00
40) CHLOROBENZENE-d5 (ISTD)	9.003	117	244616	10.00	ppb	0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	85429	10.00	ppb	0.00
System Monitoring Compounds						
34) d4-1,2-Dichloroethane ...	5.683	65	75623	11.30	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 113.00%			
51) Toluene-d8 (SURR)	7.486	98	314776	9.41	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.10%			
70) p-Bromofluorobenzene (...	10.271	95	110484	10.09	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.90%			
Target Compounds						Qvalue
30) Chloroform	5.199	83	3842	0.27	ppb	# 99
41) Trichloroethylene	6.301	95	5077	0.49	ppb	96
56) Tetrachloroethylene	8.096	166	314267	23.32	ppb	# 100

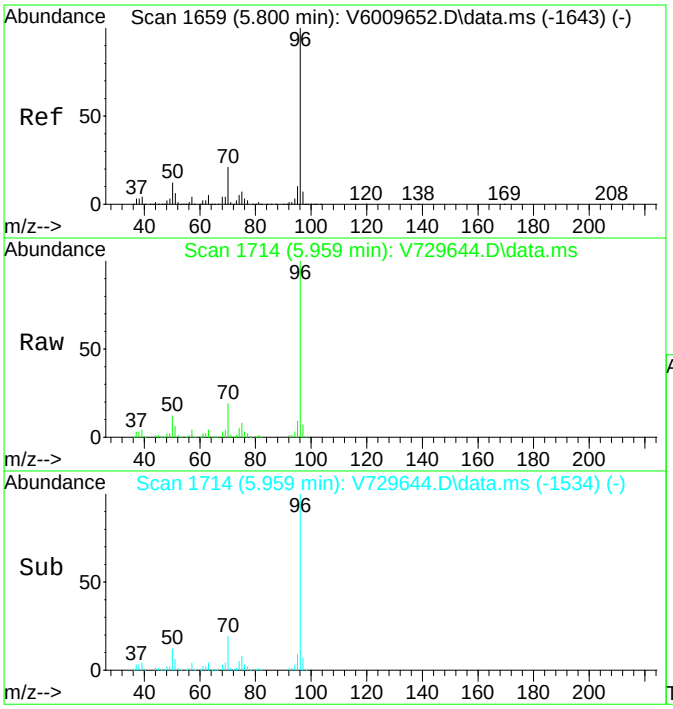
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729644.D
Acq On : 31 Oct 2018 6:45 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-03
Misc : QBV7103118A 8260 M A
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 01 12:43:15 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

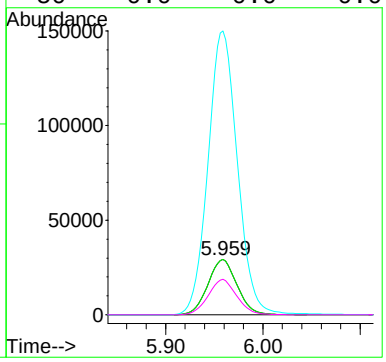


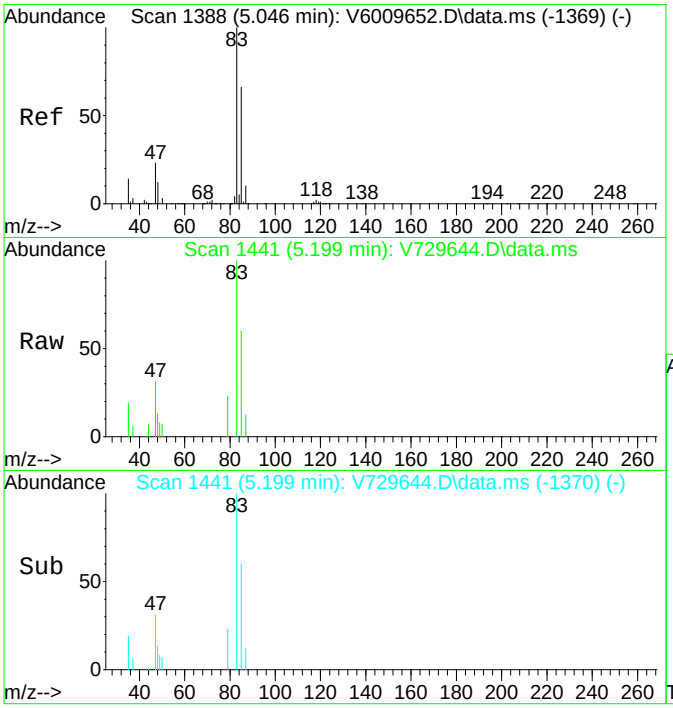


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion: 70 Resp: 61223

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	516.9	323.6	672.2
50	0.0	0.0	0.0

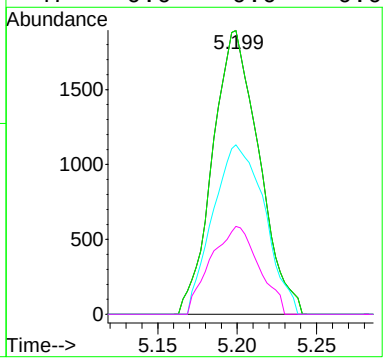


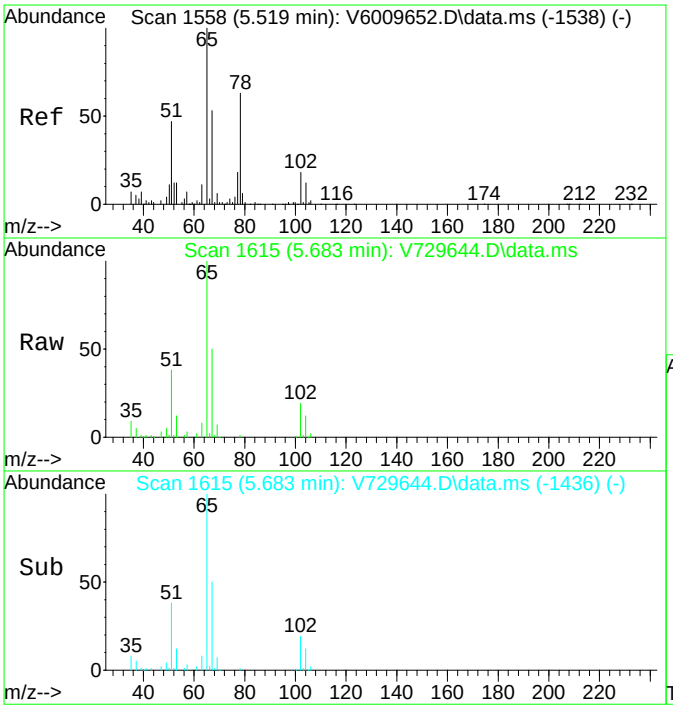


#30
Chloroform
Concen: 0.27 ppb
RT: 5.199 min Scan# 1441
Delta R.T. -0.003 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion: 83 Resp: 3842

Ion	Ratio	Lower	Upper
83	100		
83	100.0	65.0	135.0
85	66.8	41.8	86.8
47	0.0	0.0	0.0

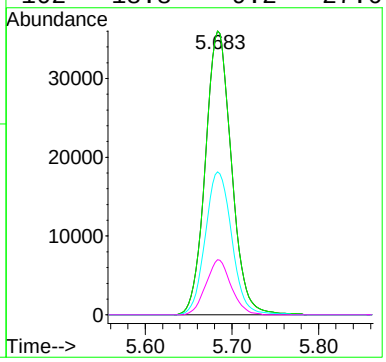


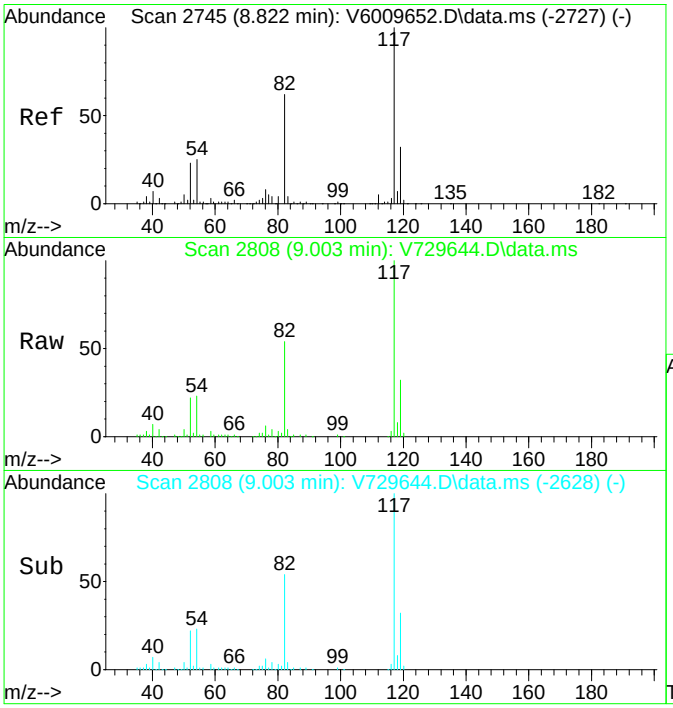


#34
d4-1,2-Dichloroethane (SURR)
Concen: 11.30 ppb
RT: 5.683 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion: 65 Resp: 75623

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.0	33.0	68.6
102	18.8	9.2	27.6

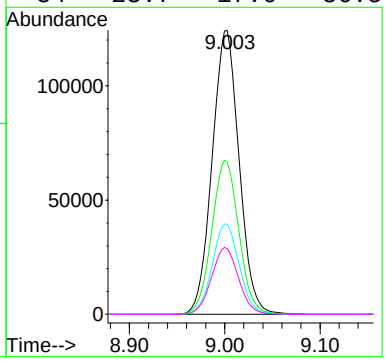


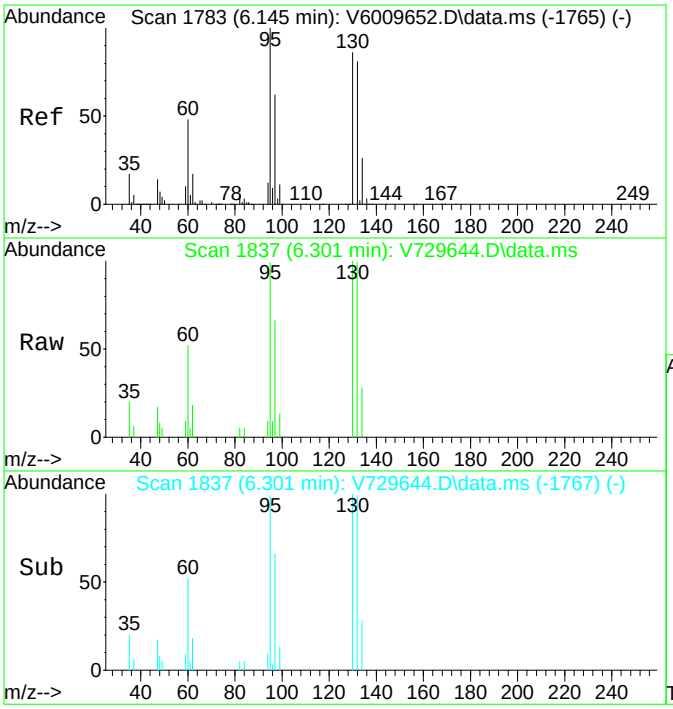


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.003 min Scan# 2808
Delta R.T. -0.000 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion:117 Resp: 244616

Ion	Ratio	Lower	Upper
117	100		
82	54.4	35.9	74.7
119	31.9	20.8	43.2
54	23.7	17.6	36.5

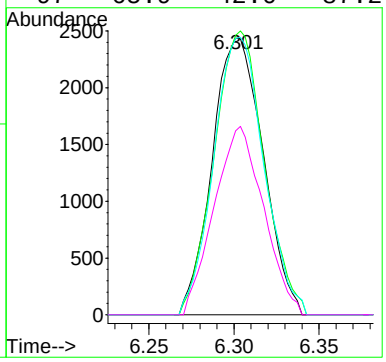


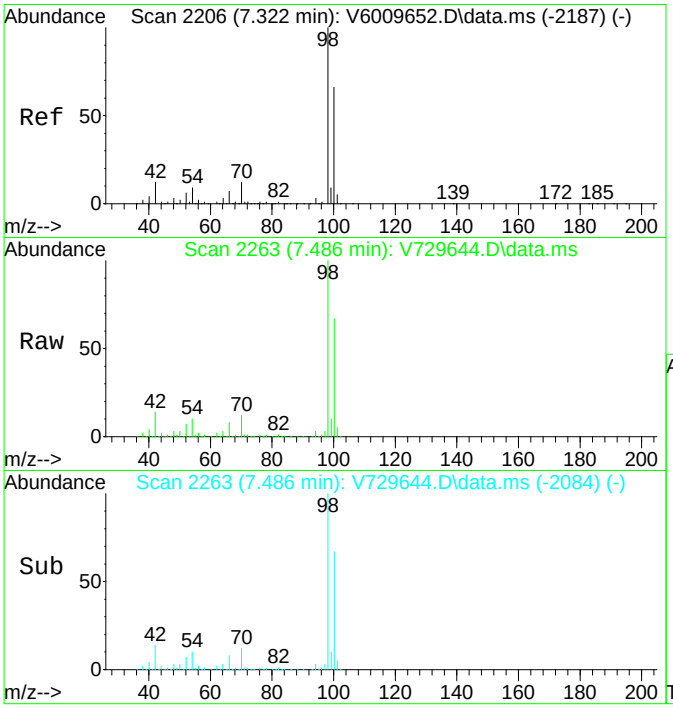


#41
Trichloroethylene
Concen: 0.49 ppb
RT: 6.301 min Scan# 1837
Delta R.T. -0.006 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion: 95 Resp: 5077

Ion	Ratio	Lower	Upper
95	100		
130	100.9	61.1	126.9
132	98.9	62.0	128.8
97	65.9	42.0	87.2

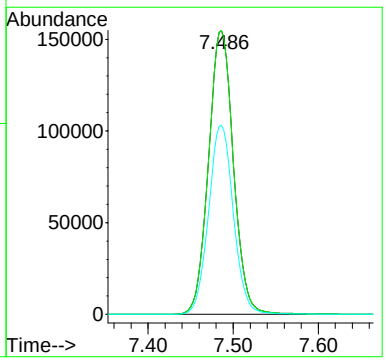


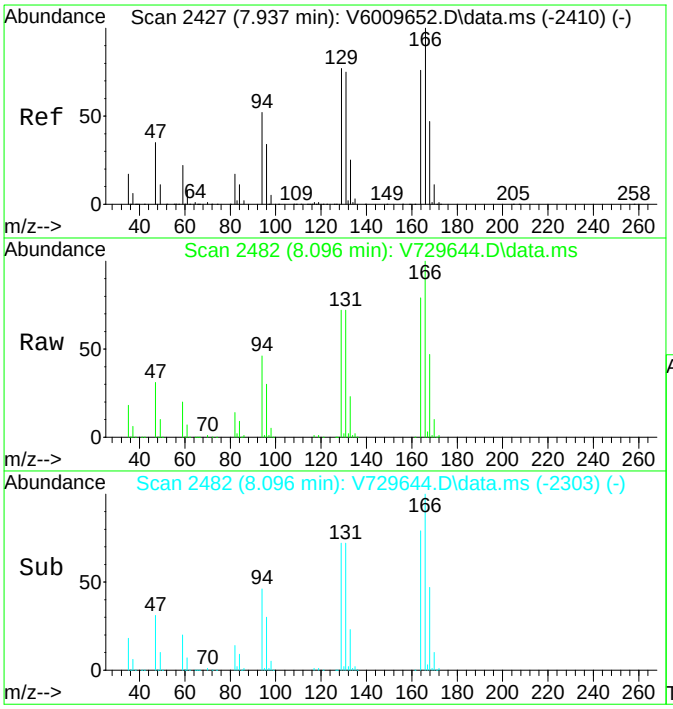


#51
Toluene-d8 (SURR)
Concen: 9.41 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion: 98 Resp: 314776

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	66.3	43.4	90.2

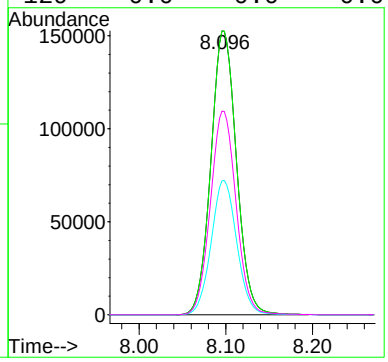


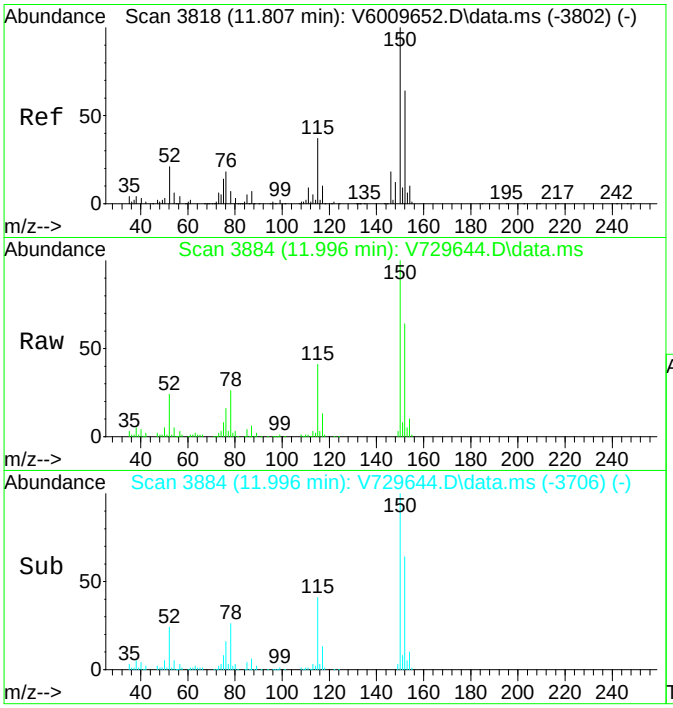


#56
Tetrachloroethylene
Concen: 23.32 ppb
RT: 8.096 min Scan# 2482
Delta R.T. -0.003 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion:166 Resp: 314267

Ion	Ratio	Lower	Upper
166	100		
166	100.0	65.0	135.0
168	47.4	0.0	0.0#
129	0.0	0.0	0.0

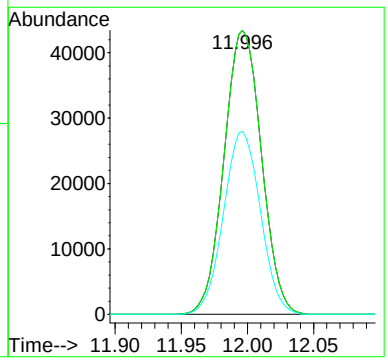


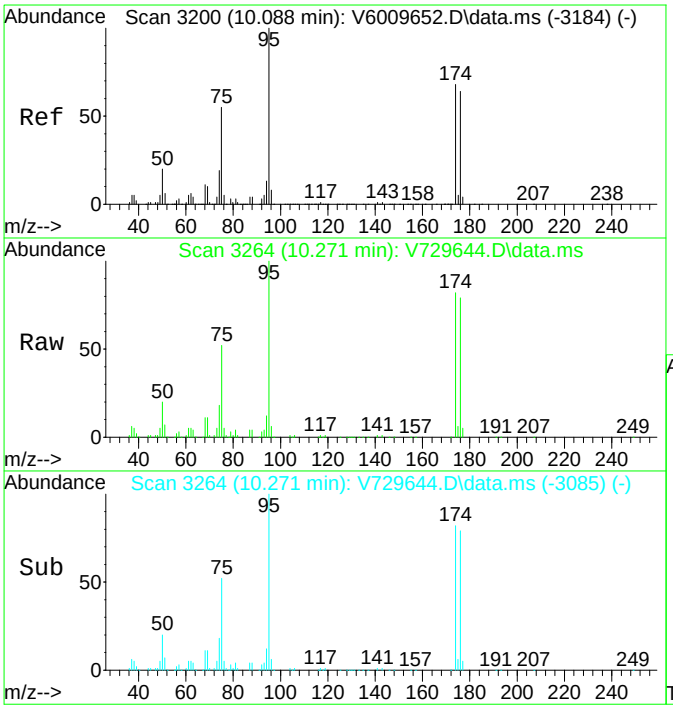


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion:152 Resp: 85429

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	63.6	33.7	101.0

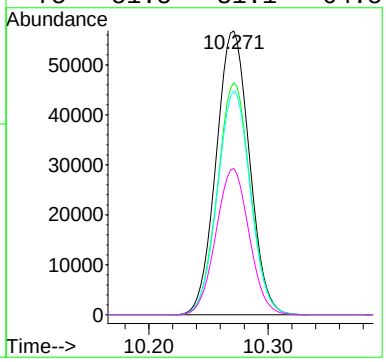




#70
p-Bromofluorobenzene (SURR)
Concen: 10.09 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729644.D
Acq: 31 Oct 2018 6:45 pm

Tgt Ion: 95 Resp: 110484

Ion	Ratio	Lower	Upper
95	100		
174	81.0	49.1	102.1
176	78.3	47.7	99.1
75	51.5	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW14_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-04 File ID: V729645.D

Sampled: 10/25/18 14:45 Prepared: 10/31/18 07:30 Analyzed: 10/31/18 19:16

Solids: Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

Batch: BJ81730 Sequence: Y8K0116 Calibration: YI80021 Instrument: MSVOA7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.00	U
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.220	J
156-59-2	cis-1,2-Dichloroethylene	1	43.1	
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.740	
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	53.3	
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.310	J
79-01-6	Trichloroethylene	1	11.4	
75-01-4	Vinyl Chloride	1	0.500	U
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.8	108	69 - 130	
SURR: Toluene-d8	10.0	9.61	96.1	81 - 117	
SURR: p-Bromofluorobenzene	10.0	9.95	99.5	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	62599	5.959	65709	5.956	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW14_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-04	File ID:	V729645.D
Sampled:	10/25/18 14:45	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 19:16
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	239322	9	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	84326	11.996	100688	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729645.D
Acq On : 31 Oct 2018 7:16 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-04
Misc : QBV7103118A 8260 M A
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 01 12:44:21 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

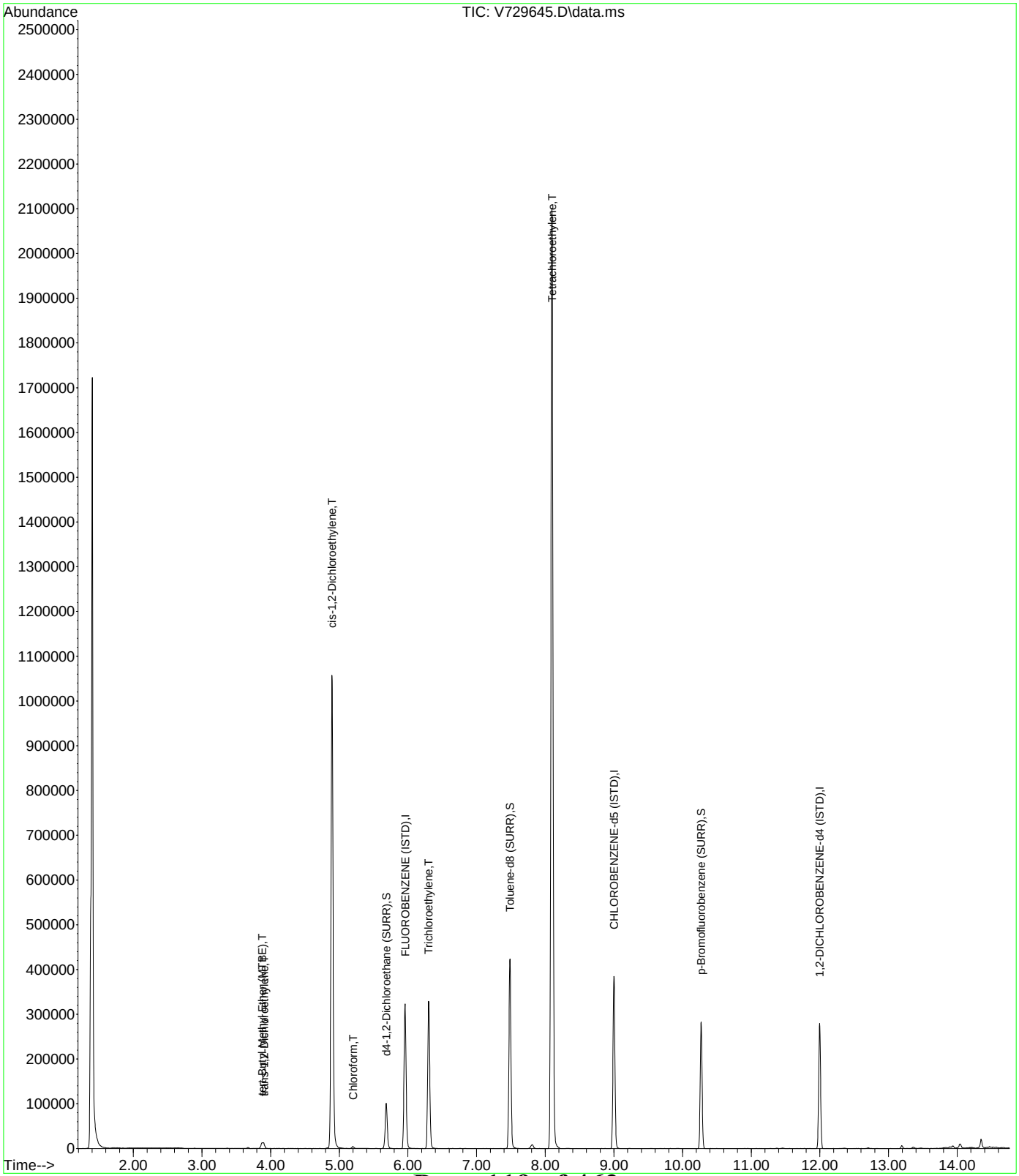
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	62599	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	239322	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	84326	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.684	65	73595	10.76	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 107.60%				
51) Toluene-d8 (SURR)	7.486	98	314602	9.61	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.10%				
70) p-Bromofluorobenzene (...	10.271	95	107564	9.95	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.50%				
Target Compounds							Qvalue
19) trans-1,2-Dichloroethy...	3.903	61	3976	0.31	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.875	73	15478	0.74	ppb	#	90
25) cis-1,2-Dichloroethylene	4.893	61	625287	43.06	ppb		89
30) Chloroform	5.199	83	3227	0.22	ppb	#	68
41) Trichloroethylene	6.301	95	116187	11.44	ppb		97
56) Tetrachloroethylene	8.098	166	702892	53.30	ppb	#	100

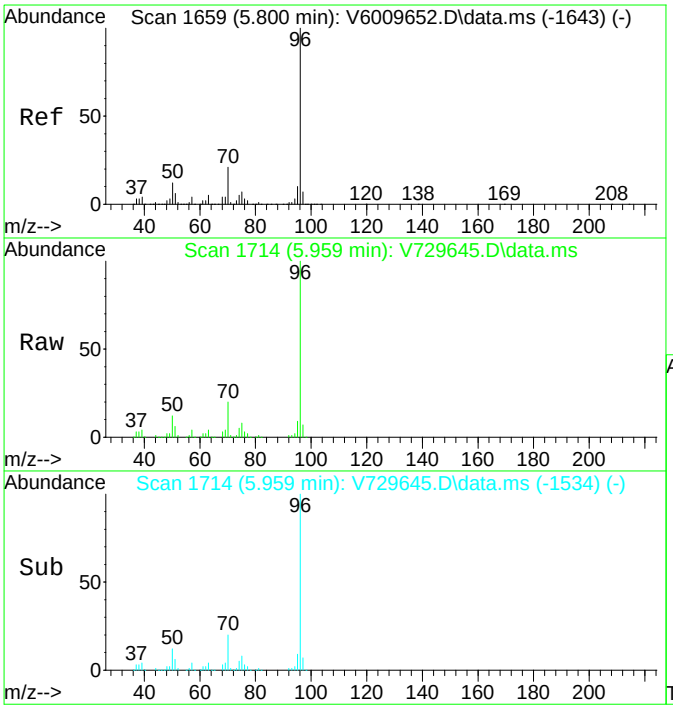
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729645.D
Acq On : 31 Oct 2018 7:16 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-04
Misc : QBV7103118A 8260 M A
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 01 12:44:21 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

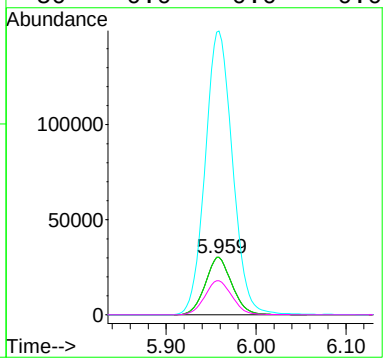


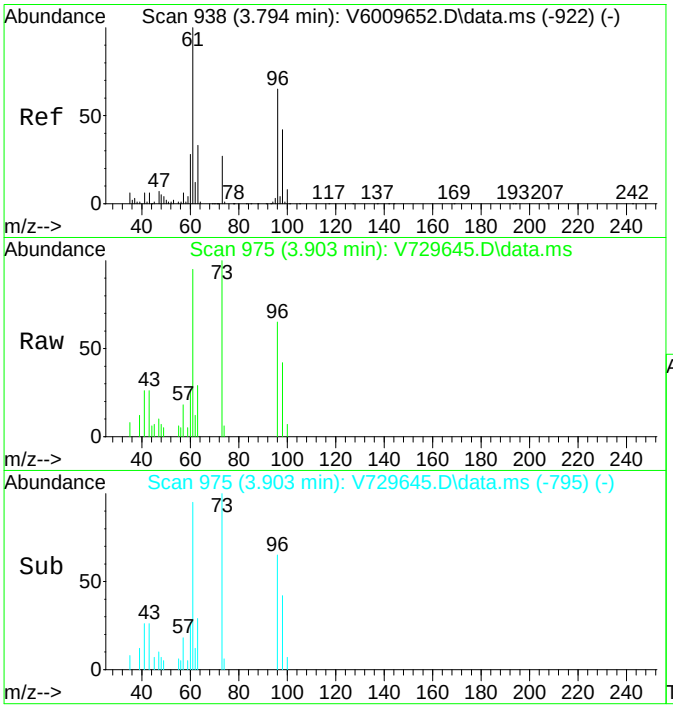


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 70 Resp: 62599

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	505.1	323.6	672.2
50	0.0	0.0	0.0

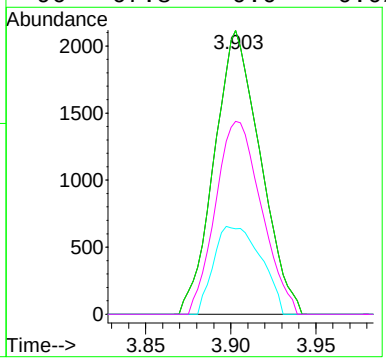


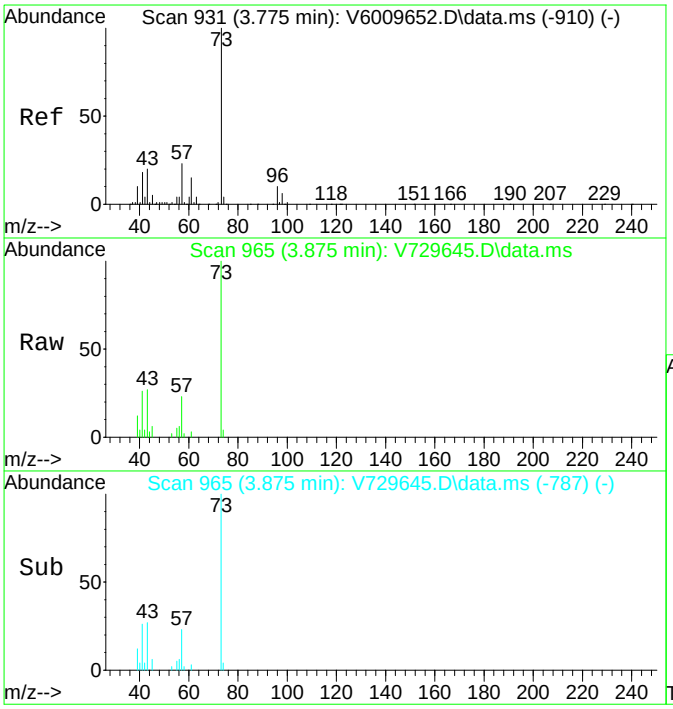


#19
trans-1,2-Dichloroethylene
Concen: 0.31 ppb
RT: 3.903 min Scan# 975
Delta R.T. 0.000 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 61 Resp: 3976

Ion	Ratio	Lower	Upper
61	100		
61	100.0	65.0	135.0
63	0.0	0.0	0.0
96	67.8	0.0	0.0#

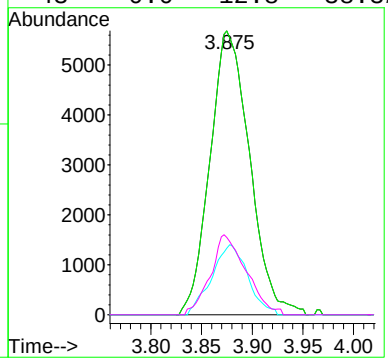


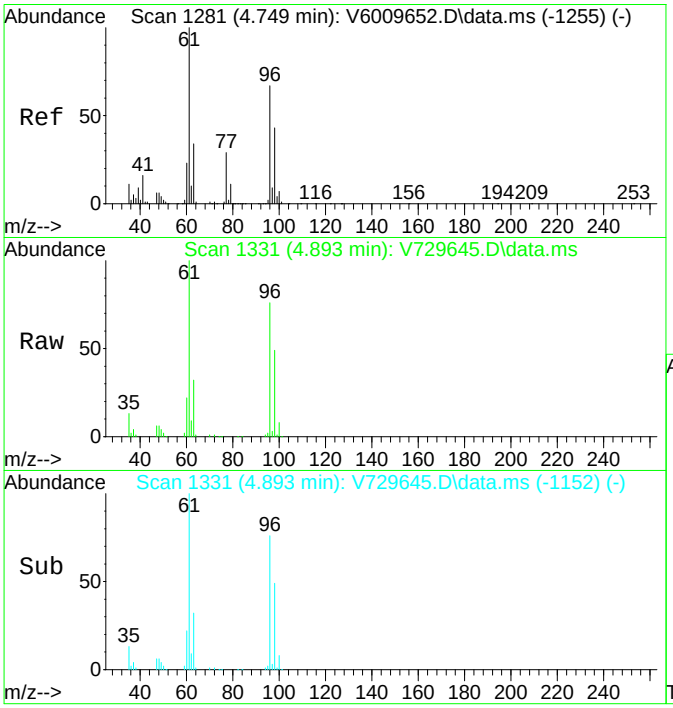


#20
tert-Butyl Methyl Ether (MTBE)
Concen: 0.74 ppb
RT: 3.875 min Scan# 965
Delta R.T. -0.006 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 73 Resp: 15478

Ion	Ratio	Lower	Upper
73	100		
73	100.0	80.0	120.0
57	22.4	13.2	39.5
43	0.0	12.8	38.3#

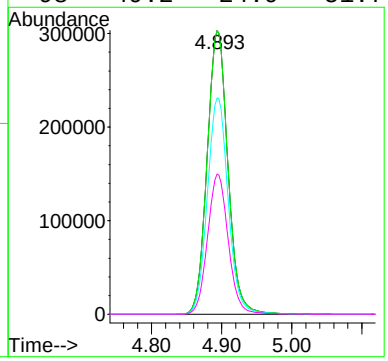


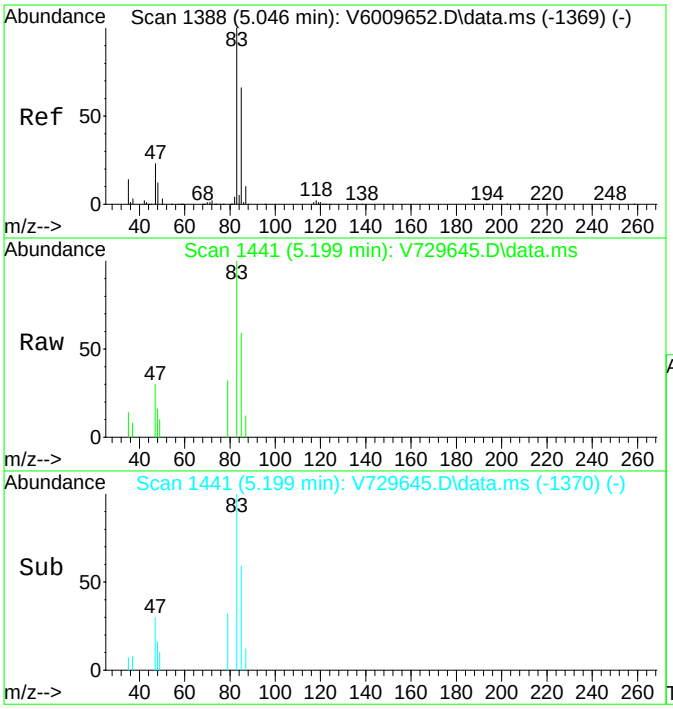


#25
cis-1,2-Dichloroethylene
Concen: 43.06 ppb
RT: 4.893 min Scan# 1331
Delta R.T. -0.003 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 61 Resp: 625287

Ion	Ratio	Lower	Upper
61	100		
61	100.0	65.0	135.0
96	76.6	37.8	78.4
98	49.2	24.9	51.7

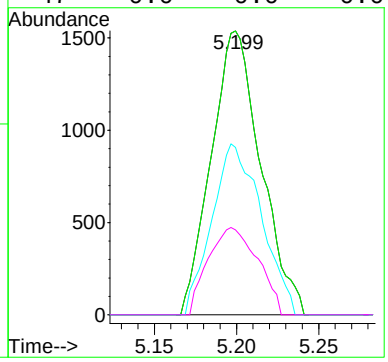


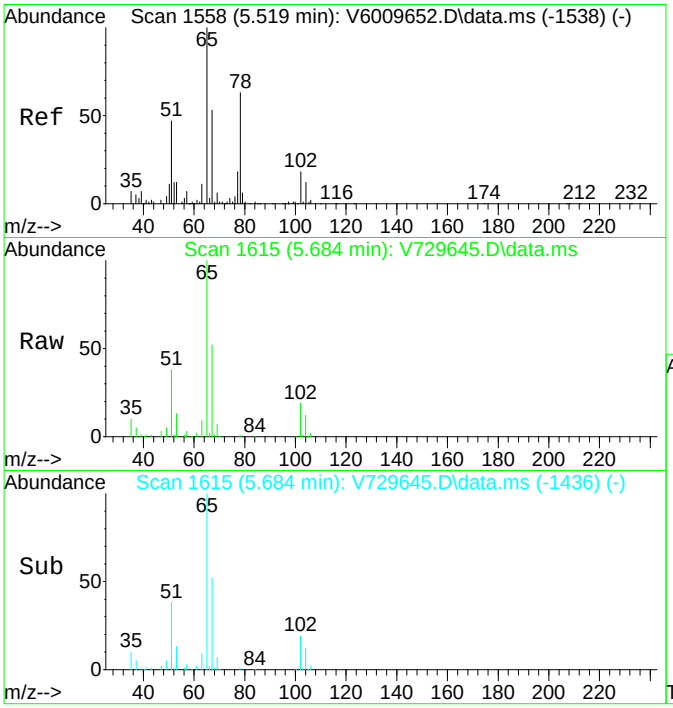


#30
Chloroform
Concen: 0.22 ppb
RT: 5.199 min Scan# 1441
Delta R.T. -0.003 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 83 Resp: 3227

Ion	Ratio	Lower	Upper
83	100		
83	100.0	65.0	135.0
85	0.0	41.8	86.8#
47	0.0	0.0	0.0

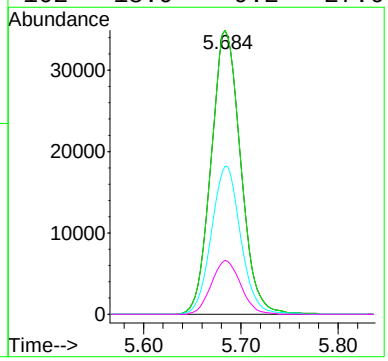


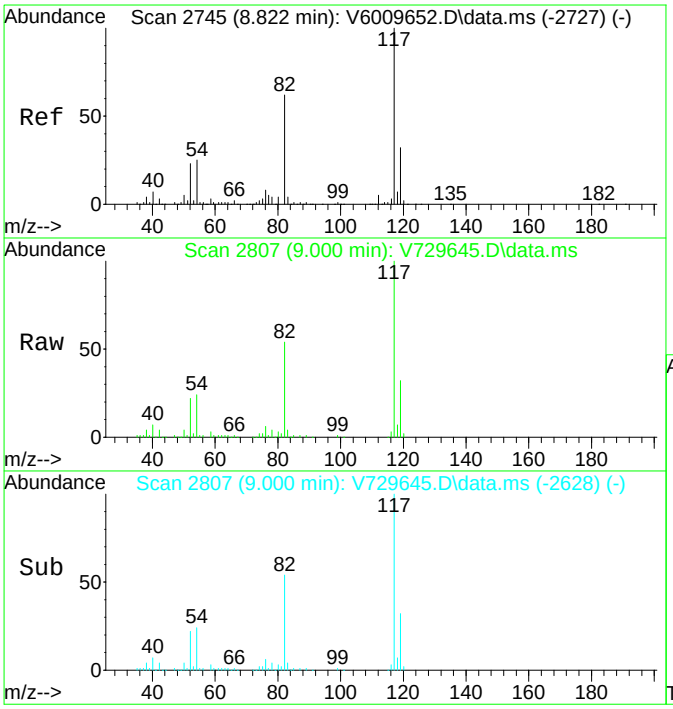


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.76 ppb
RT: 5.684 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 65 Resp: 73595

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.8	33.0	68.6
102	18.9	9.2	27.6

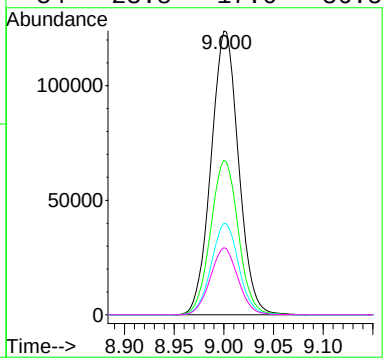


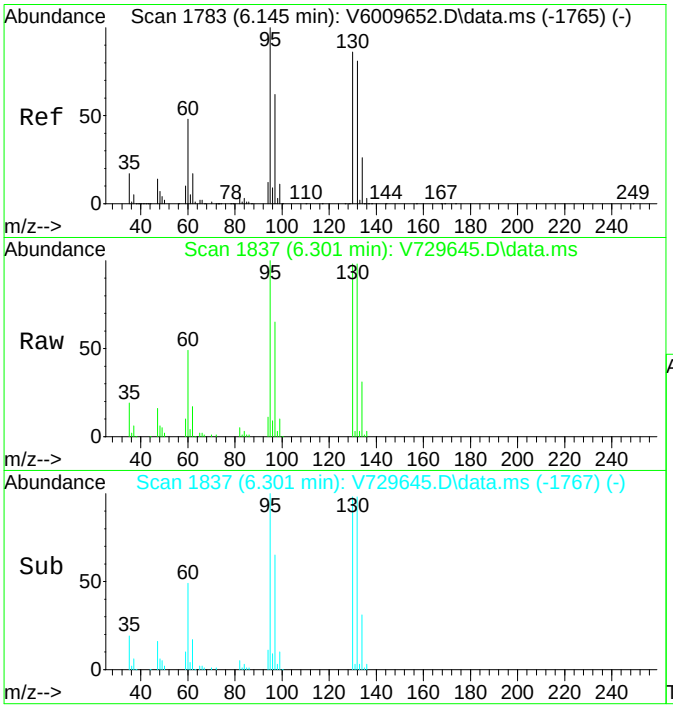


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion:117 Resp: 239322

Ion	Ratio	Lower	Upper
117	100		
82	54.8	35.9	74.7
119	32.2	20.8	43.2
54	23.8	17.6	36.5

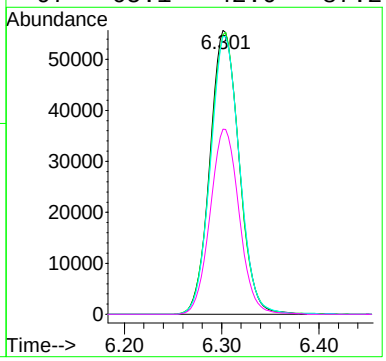


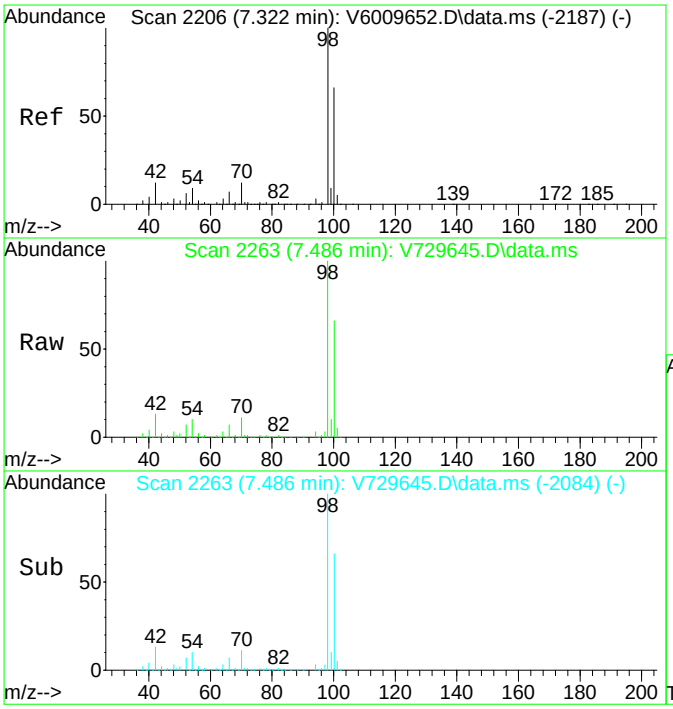


#41
Trichloroethylene
Concen: 11.44 ppb
RT: 6.301 min Scan# 1837
Delta R.T. -0.006 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 95 Resp: 116187

Ion	Ratio	Lower	Upper
95	100		
130	98.6	61.1	126.9
132	97.6	62.0	128.8
97	65.1	42.0	87.2

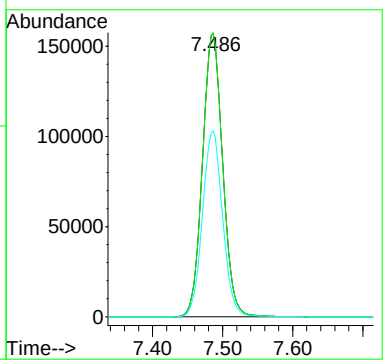


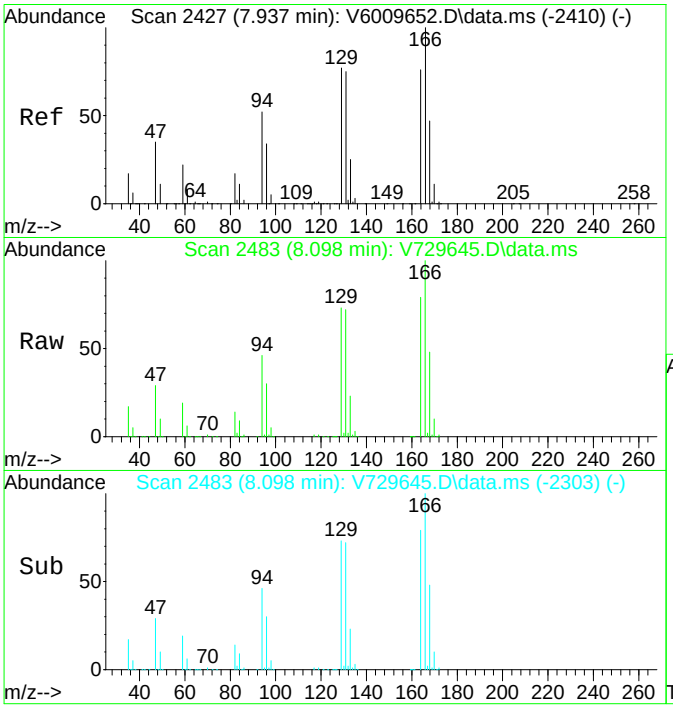


#51
Toluene-d8 (SURR)
Concen: 9.61 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 98 Resp: 314602

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	65.5	43.4	90.2

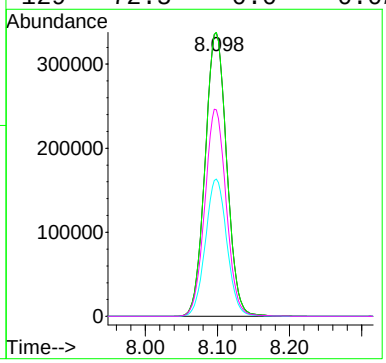


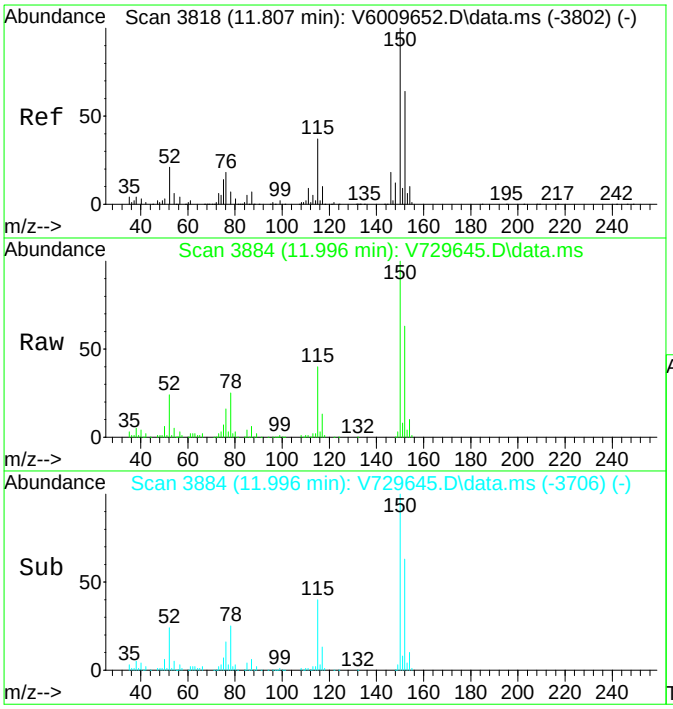


#56
Tetrachloroethylene
Concen: 53.30 ppb
RT: 8.098 min Scan# 2483
Delta R.T. 0.000 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion:166 Resp: 702892

Ion	Ratio	Lower	Upper
166	100		
166	100.0	65.0	135.0
168	0.0	0.0	0.0
129	72.5	0.0	0.0#

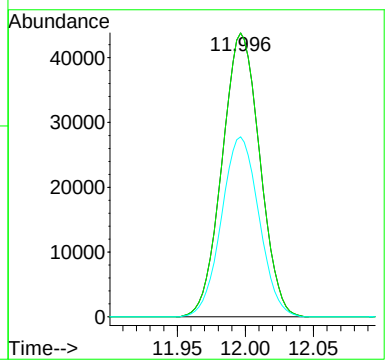


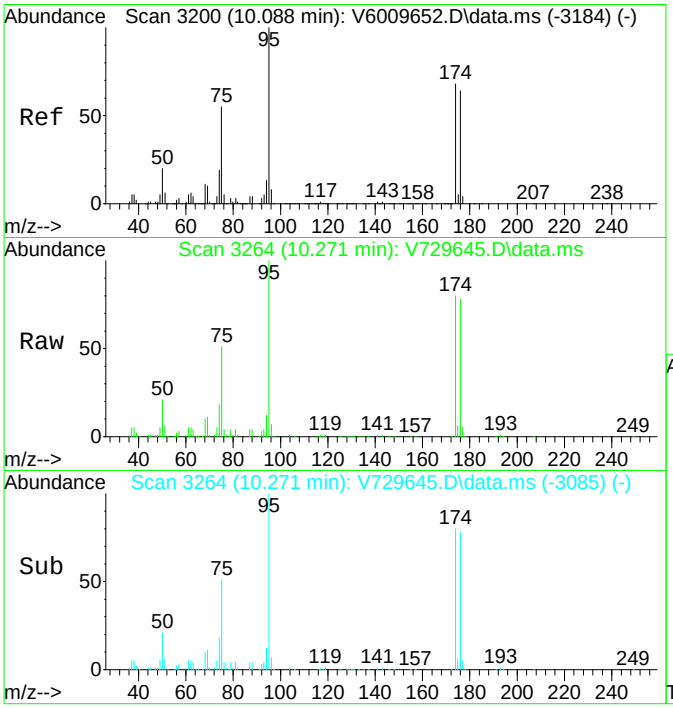


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion:152 Resp: 84326

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	63.2	33.7	101.0

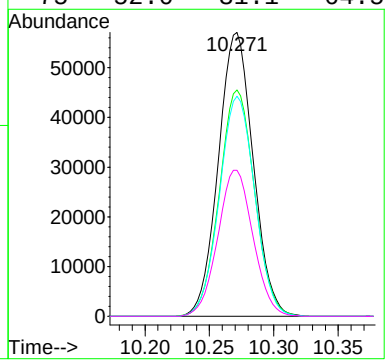




#70
p-Bromofluorobenzene (SURR)
Concen: 9.95 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729645.D
Acq: 31 Oct 2018 7:16 pm

Tgt Ion: 95 Resp: 107564

Ion	Ratio	Lower	Upper
95	100		
174	80.7	49.1	102.1
176	78.6	47.7	99.1
75	52.0	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW13_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-05 File ID: V729646.D

Sampled: 10/25/18 15:10 Prepared: 10/31/18 07:30 Analyzed: 10/31/18 19:48

Solids: Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

Batch: BJ81730 Sequence: Y8K0116 Calibration: YI80021 Instrument: MSVOA7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	4.72	
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.500	U
156-59-2	cis-1,2-Dichloroethylene	1	4.22	
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	2.48	
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.200	J
79-01-6	Trichloroethylene	1	1.78	
75-01-4	Vinyl Chloride	1	7.55	
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	11.0	110	69 - 130	
SURR: Toluene-d8	10.0	9.59	95.9	81 - 117	
SURR: p-Bromofluorobenzene	10.0	9.74	97.4	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	62491	5.959	65709	5.956	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW13_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-05	File ID:	V729646.D
Sampled:	10/25/18 15:10	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 19:48
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	238842	9	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	86624	11.996	100688	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729646.D
Acq On : 31 Oct 2018 7:48 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-05
Misc : QBV7103118A 8260 M A
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 01 12:45:47 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

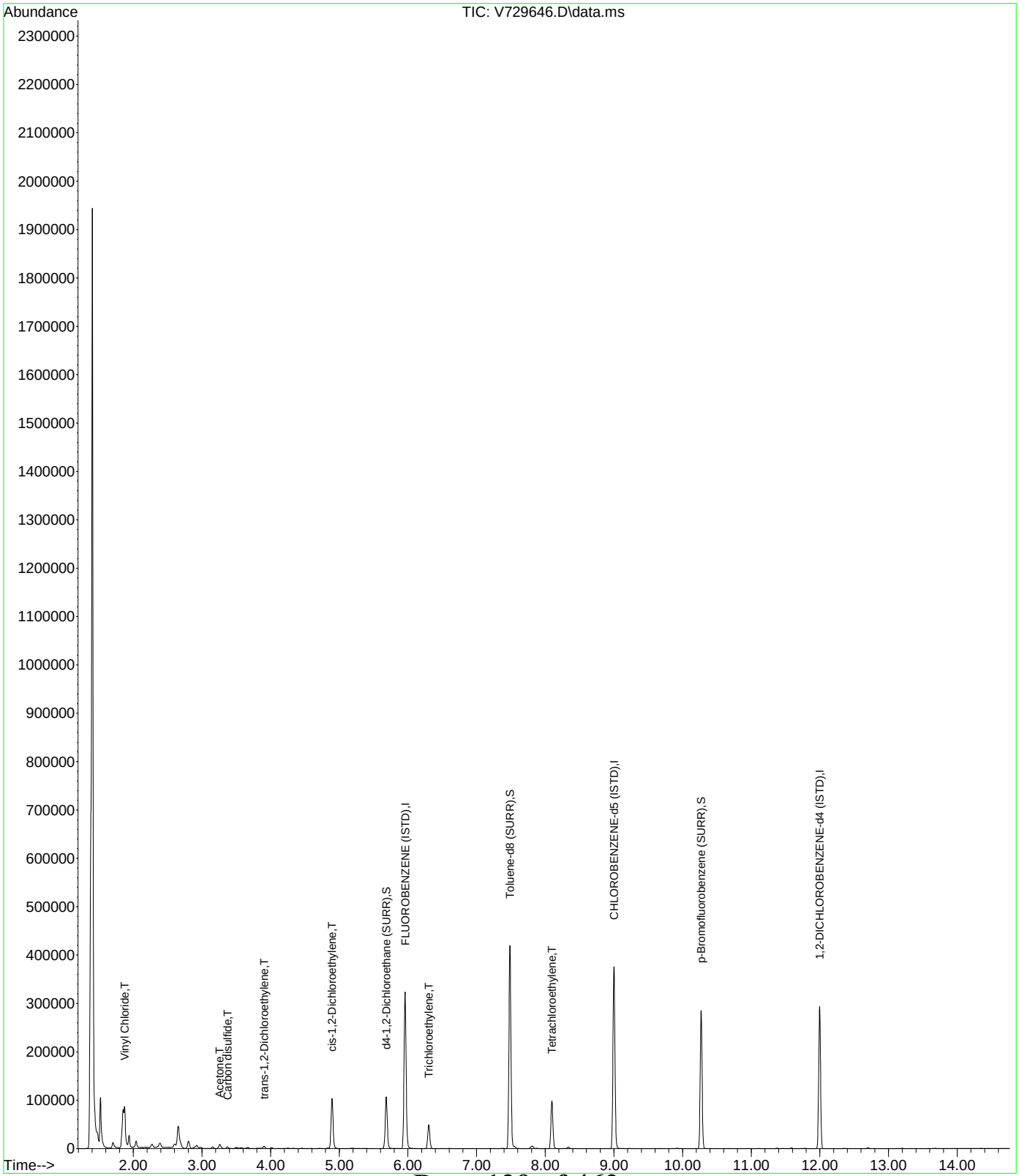
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	62491	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	238842	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	86624	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.684	65	75292	11.02	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.20%				
51) Toluene-d8 (SURR)	7.486	98	313379	9.59	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.90%				
70) p-Bromofluorobenzene (...	10.271	95	108151	9.74	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.40%				
Target Compounds							Qvalue
4) Vinyl Chloride	1.875	62	70380	7.55	ppb		100
12) Acetone	3.257	43	10372	4.72	ppb	#	100
15) Carbon disulfide	3.371	76	4914	0.21	ppb		100
19) trans-1,2-Dichloroethy...	3.906	61	2631	0.20	ppb	#	100
25) cis-1,2-Dichloroethylene	4.893	61	61145	4.22	ppb		89
41) Trichloroethylene	6.304	95	18051	1.78	ppb		99
56) Tetrachloroethylene	8.096	166	32594	2.48	ppb	#	100

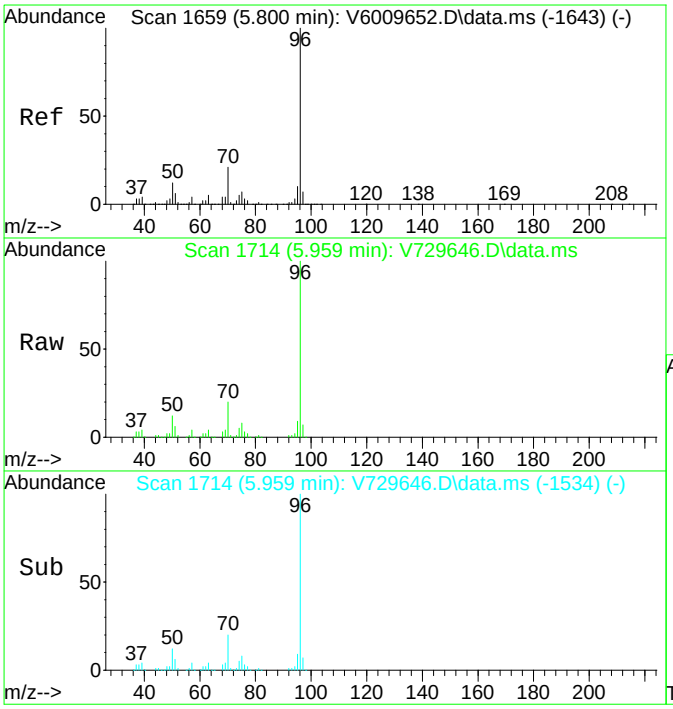
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729646.D
Acq On : 31 Oct 2018 7:48 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-05
Misc : QBV7103118A 8260 M A
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 01 12:45:47 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

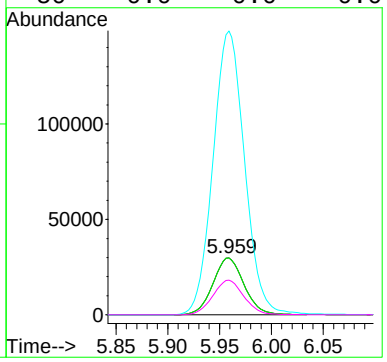


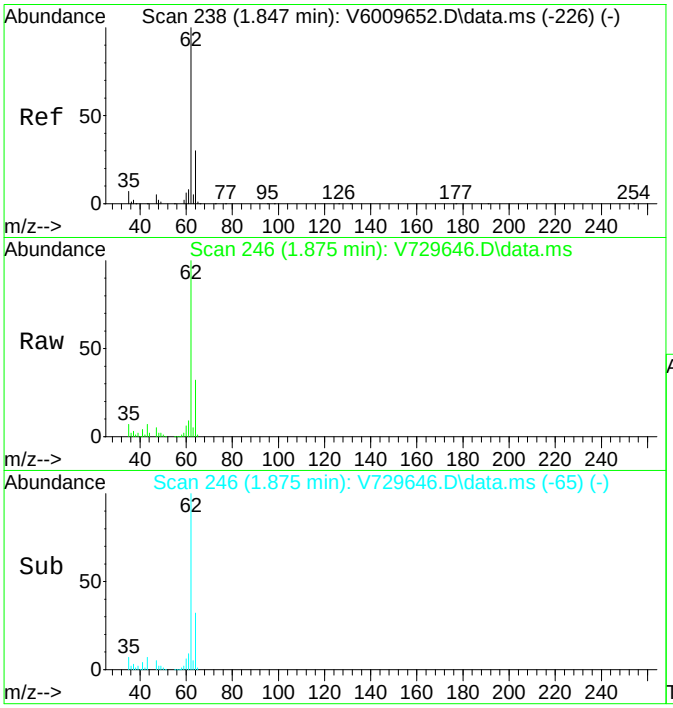


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 70 Resp: 62491

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	505.5	323.6	672.2
50	0.0	0.0	0.0

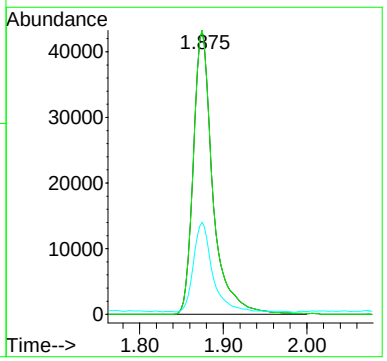


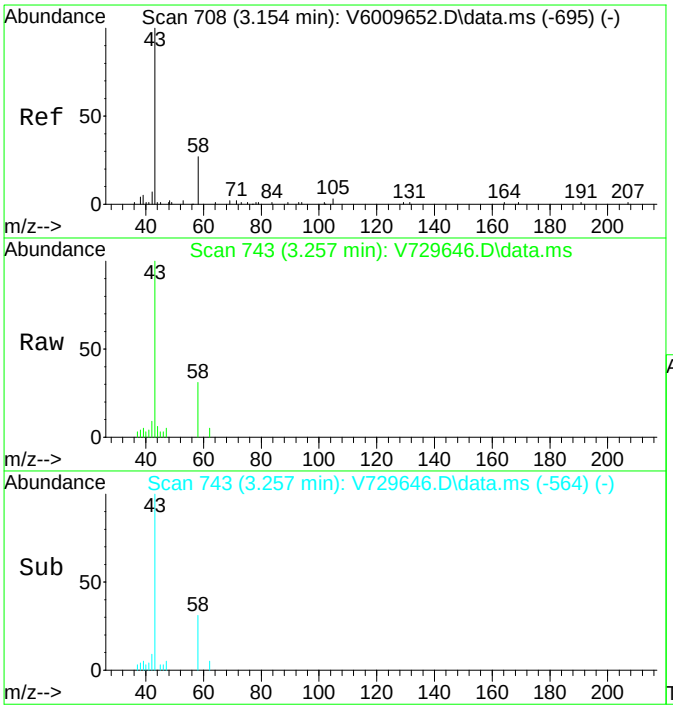


#4
Vinyl Chloride
Concen: 7.55 ppb
RT: 1.875 min Scan# 246
Delta R.T. 0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 62 Resp: 70380

Ion	Ratio	Lower	Upper
62	100		
62	100.0	65.0	135.0
64	30.4	20.2	42.0

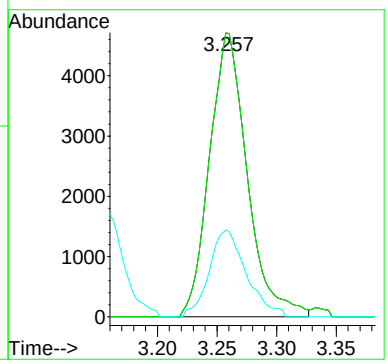


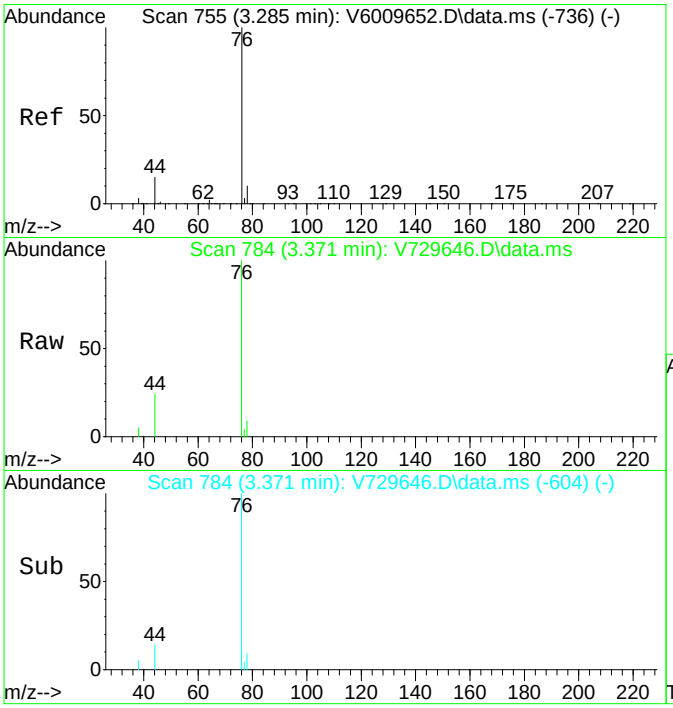


#12
Acetone
Concen: 4.72 ppb
RT: 3.257 min Scan# 743
Delta R.T. -0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 43 Resp: 10372

Ion	Ratio	Lower	Upper
43	100		
43	100.0	80.0	120.0
58	30.1	0.0	0.0#

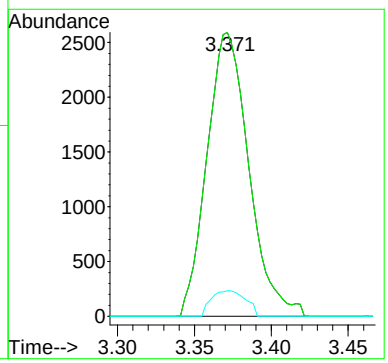


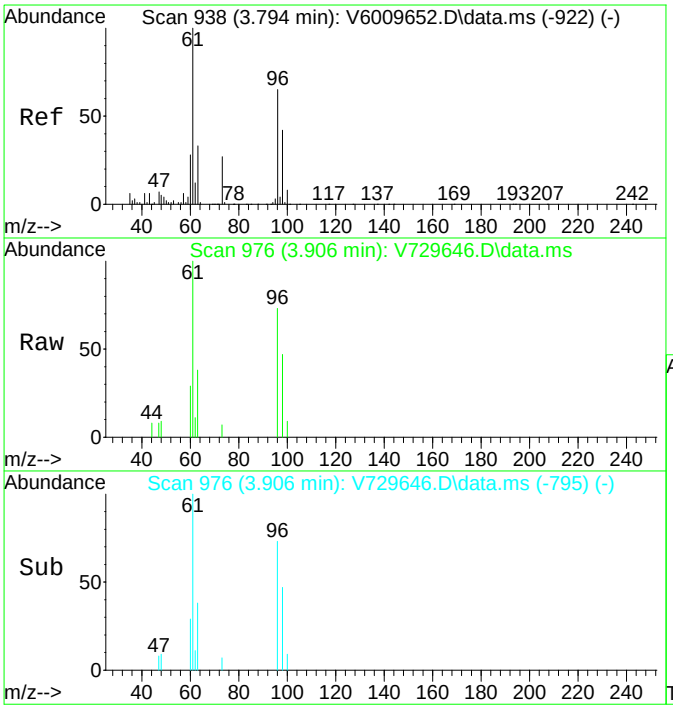


#15
Carbon disulfide
Concen: 0.21 ppb
RT: 3.371 min Scan# 784
Delta R.T. 0.000 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 76 Resp: 4914

Ion	Ratio	Lower	Upper
76	100		
76	100.0	65.0	135.0
78	7.4	4.5	13.5

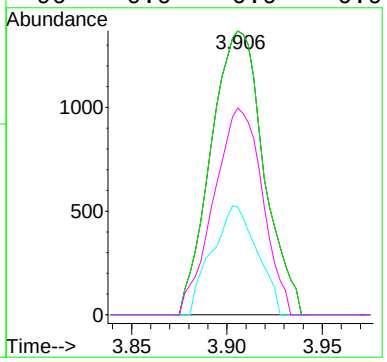


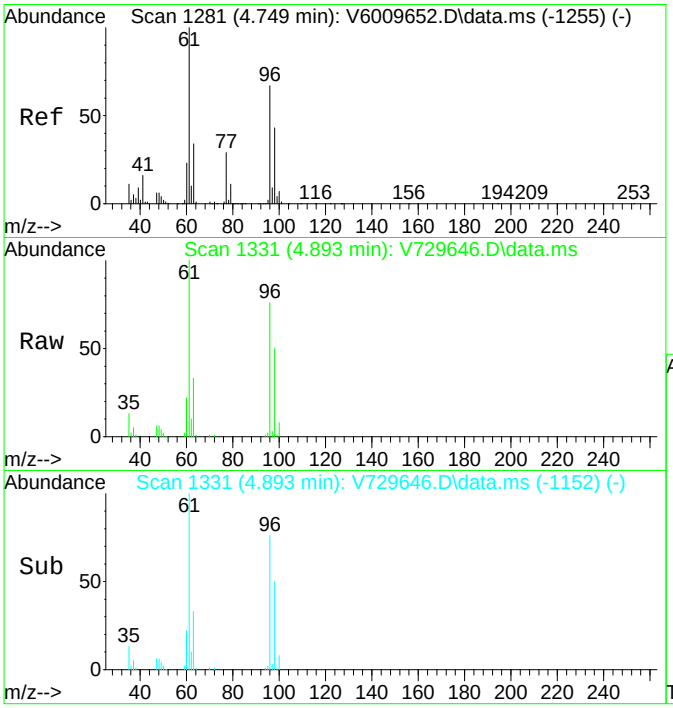


#19
trans-1,2-Dichloroethylene
Concen: 0.20 ppb
RT: 3.906 min Scan# 976
Delta R.T. 0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 61 Resp: 2631

Ion	Ratio	Lower	Upper
61	100		
61	100.0	65.0	135.0
63	33.0	0.0	0.0#
96	0.0	0.0	0.0

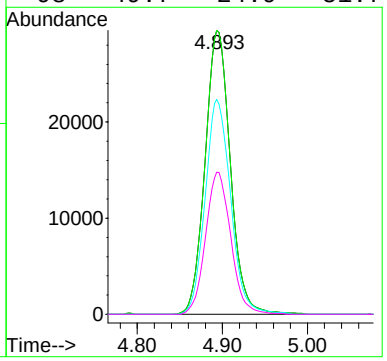


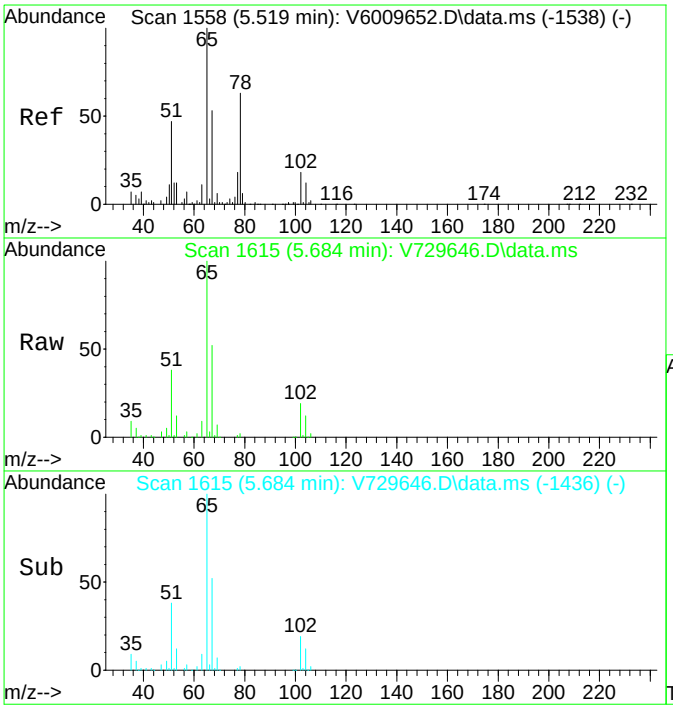


#25
cis-1,2-Dichloroethylene
Concen: 4.22 ppb
RT: 4.893 min Scan# 1331
Delta R.T. -0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 61 Resp: 61145

Ion	Ratio	Lower	Upper
61	100		
61	100.0	65.0	135.0
96	76.5	37.8	78.4
98	49.7	24.9	51.7

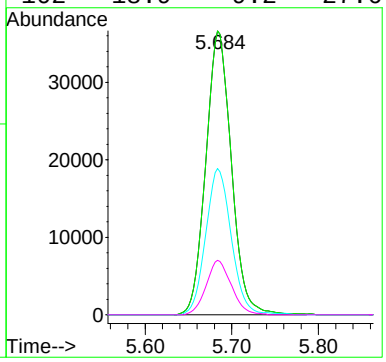


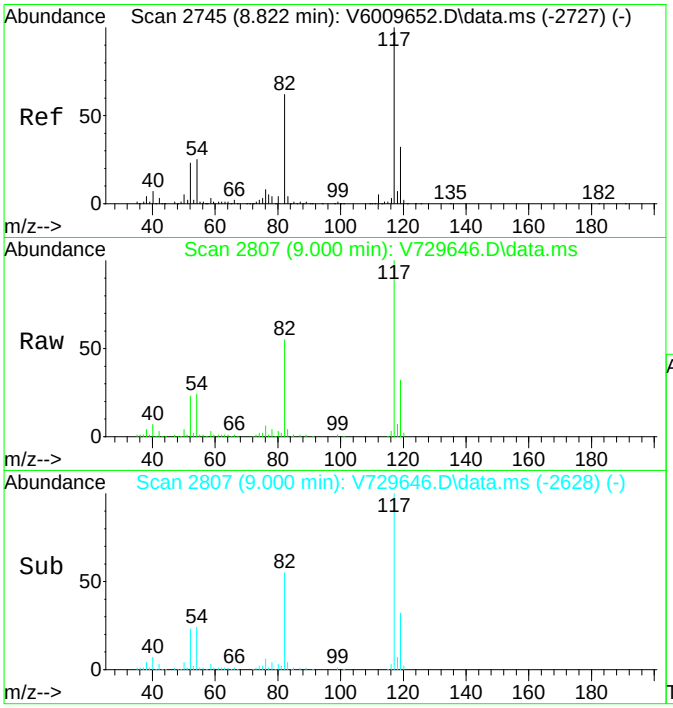


#34
d4-1,2-Dichloroethane (SURR)
Concen: 11.02 ppb
RT: 5.684 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 65 Resp: 75292

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.5	33.0	68.6
102	18.9	9.2	27.6

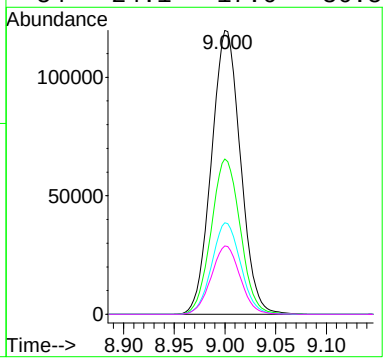


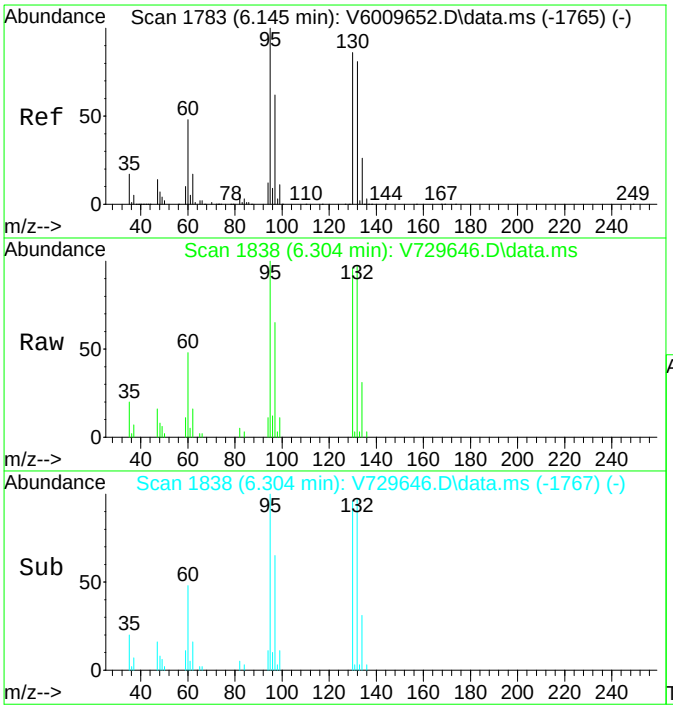


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion:117 Resp: 238842

Ion	Ratio	Lower	Upper
117	100		
82	54.9	35.9	74.7
119	32.1	20.8	43.2
54	24.1	17.6	36.5

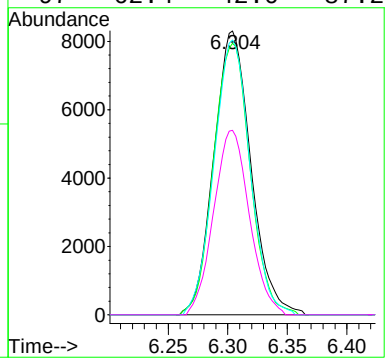


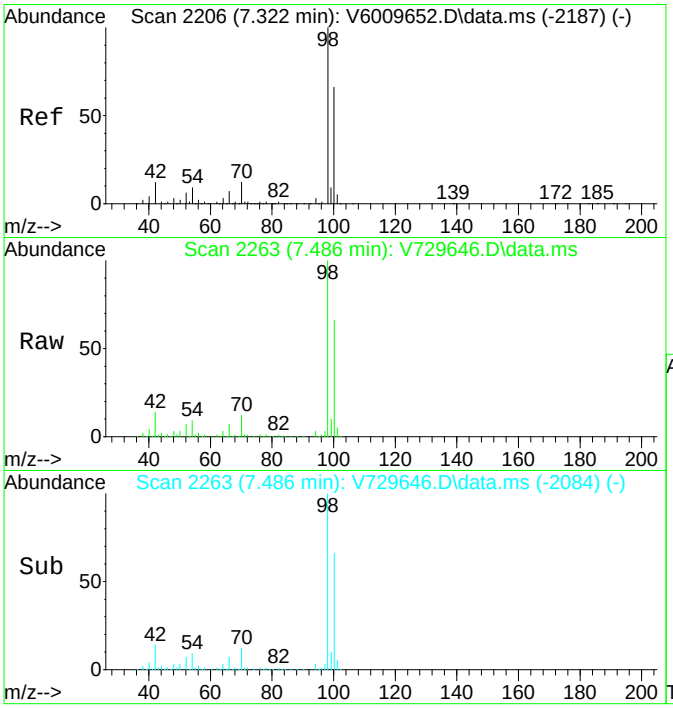


#41
Trichloroethylene
Concen: 1.78 ppb
RT: 6.304 min Scan# 1838
Delta R.T. -0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 95 Resp: 18051

Ion	Ratio	Lower	Upper
95	100		
130	94.2	61.1	126.9
132	94.0	62.0	128.8
97	62.4	42.0	87.2

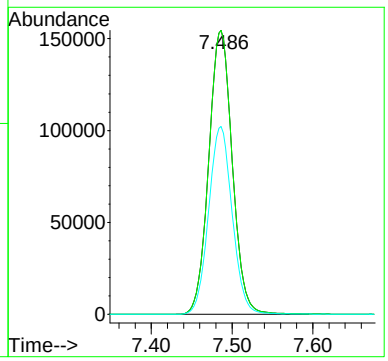


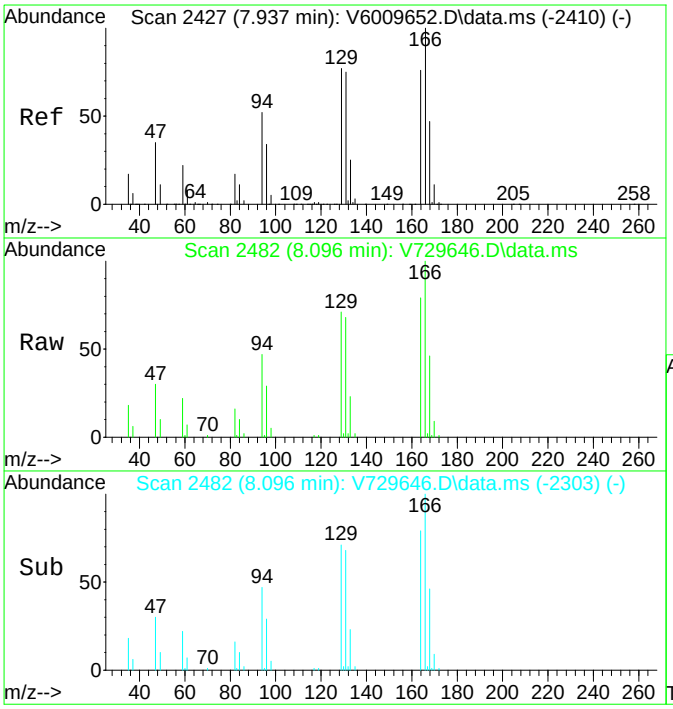


#51
Toluene-d8 (SURR)
Concen: 9.59 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 98 Resp: 313379

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	66.2	43.4	90.2

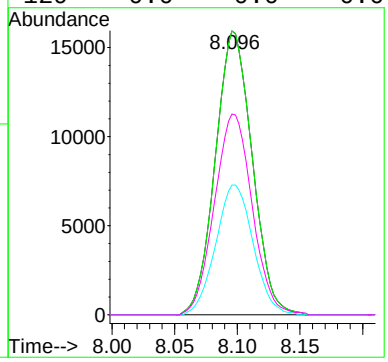


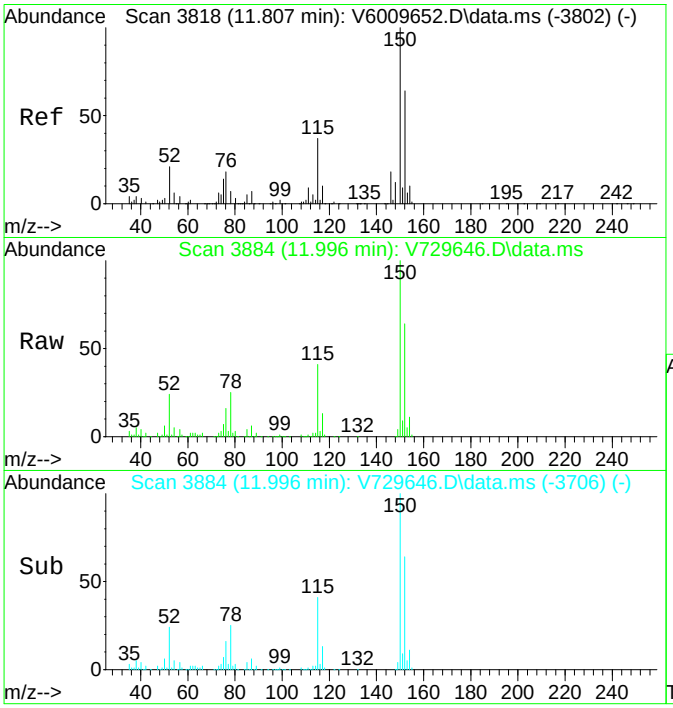


#56
Tetrachloroethylene
Concen: 2.48 ppb
RT: 8.096 min Scan# 2482
Delta R.T. -0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion:166 Resp: 32594

Ion	Ratio	Lower	Upper
166	100		
166	100.0	65.0	135.0
168	46.5	0.0	0.0#
129	0.0	0.0	0.0

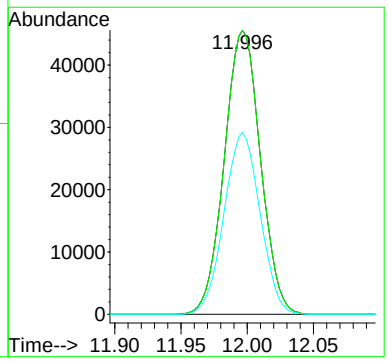


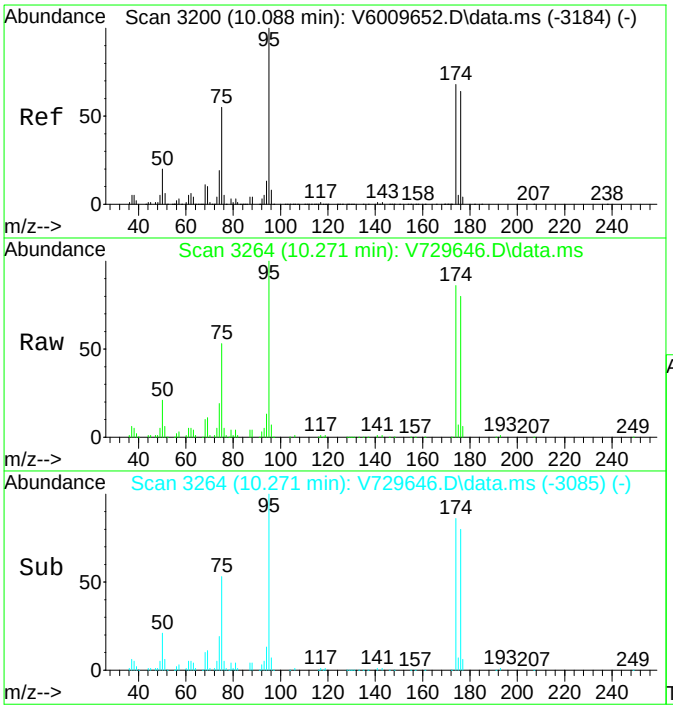


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion:152 Resp: 86624

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	63.9	33.7	101.0

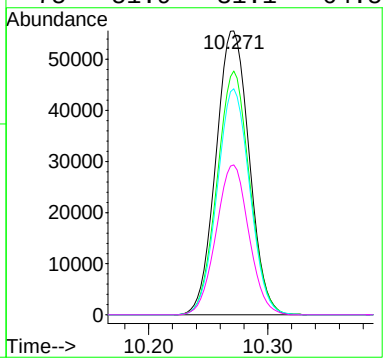




#70
p-Bromofluorobenzene (SURR)
Concen: 9.74 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729646.D
Acq: 31 Oct 2018 7:48 pm

Tgt Ion: 95 Resp: 108151

Ion	Ratio	Lower	Upper
95	100		
174	84.0	49.1	102.1
176	78.3	47.7	99.1
75	51.9	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW12_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-06	File ID:	V729647.D
Sampled:	10/25/18 15:20	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 20:19
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.91	
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.500	U
156-59-2	cis-1,2-Dichloroethylene	1	1.16	
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	3.82	
108-88-3	Toluene	1	0.300	J
156-60-5	trans-1,2-Dichloroethylene	1	0.500	U
79-01-6	Trichloroethylene	1	1.50	
75-01-4	Vinyl Chloride	1	1.14	
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.6	106	69 - 130	
SURR: Toluene-d8	10.0	9.65	96.5	81 - 117	
SURR: p-Bromofluorobenzene	10.0	10.1	101	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	58024	5.959	65709	5.956	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW12_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-06	File ID:	V729647.D
Sampled:	10/25/18 15:20	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 20:19
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	224113	9	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	77557	11.996	100688	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729647.D
Acq On : 31 Oct 2018 8:19 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-06
Misc : QBV7103118A 8260 M A
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Nov 01 12:46:28 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

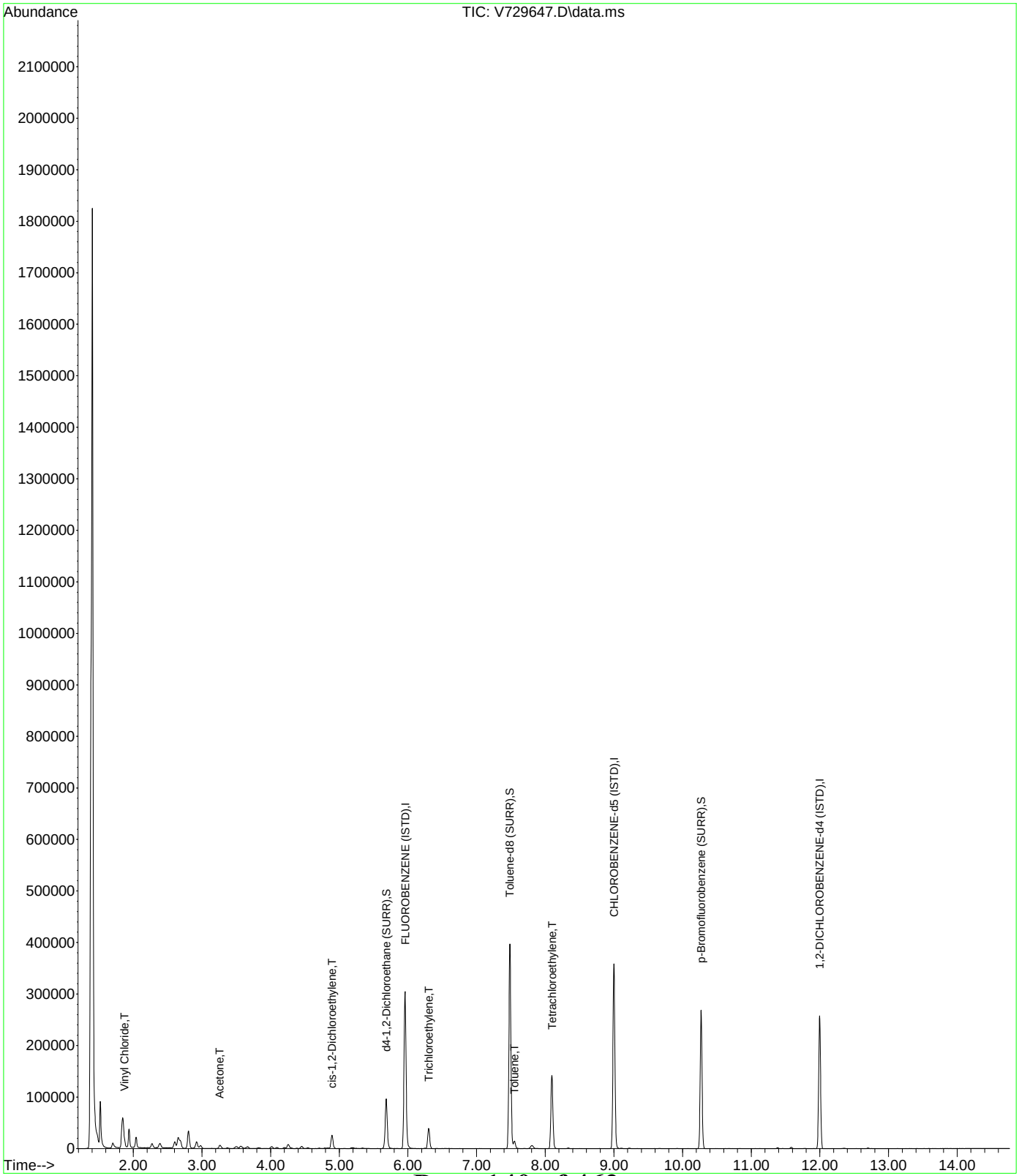
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	58024	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	224113	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	77557	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	67414	10.63	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.30%				
51) Toluene-d8 (SURR)	7.484	98	295939	9.65	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.50%				
70) p-Bromofluorobenzene (...	10.271	95	100443	10.11	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.10%				
Target Compounds							Qvalue
4) Vinyl Chloride	1.872	62	9828	1.14	ppb		99
12) Acetone	3.257	43	5941	2.91	ppb	#	100
25) cis-1,2-Dichloroethylene	4.893	61	15632	1.16	ppb		90
41) Trichloroethylene	6.304	95	14284	1.50	ppb		99
52) Toluene	7.550	91	10950	0.30	ppb		99
56) Tetrachloroethylene	8.098	166	47134	3.82	ppb	#	100

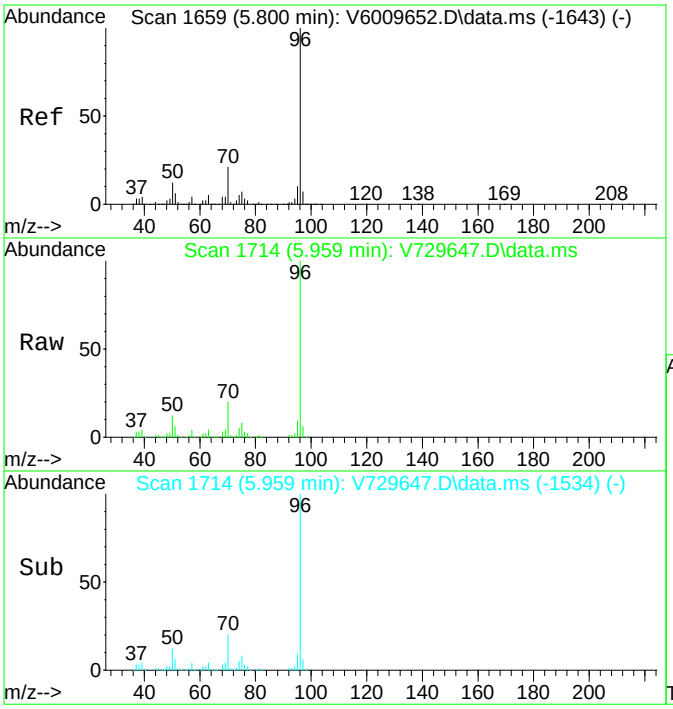
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729647.D
Acq On : 31 Oct 2018 8:19 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-06
Misc : QBV7103118A 8260 M A
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Nov 01 12:46:28 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

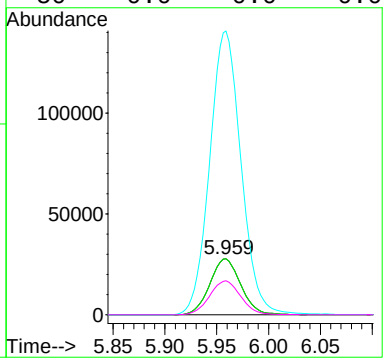


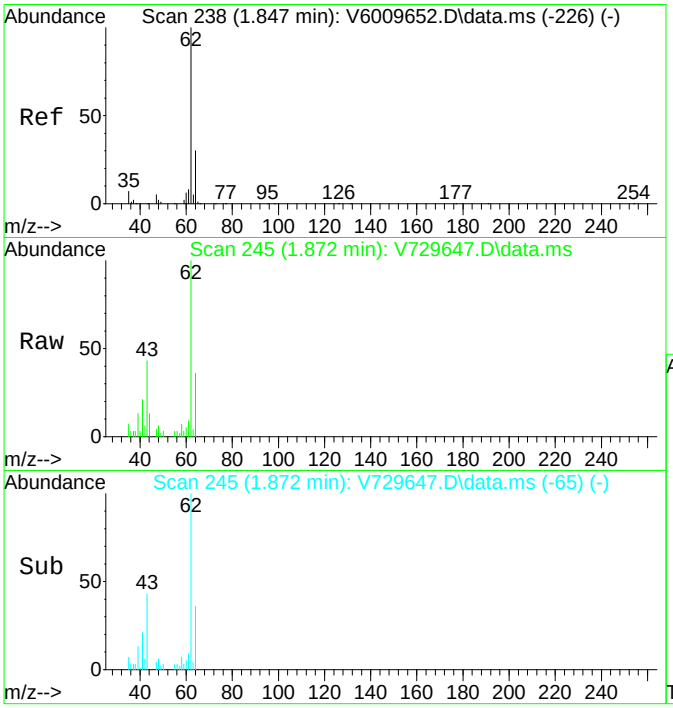


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 70 Resp: 58024

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	513.2	323.6	672.2
50	0.0	0.0	0.0

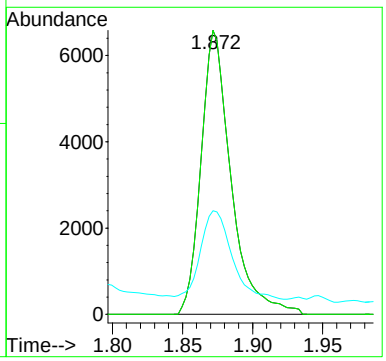


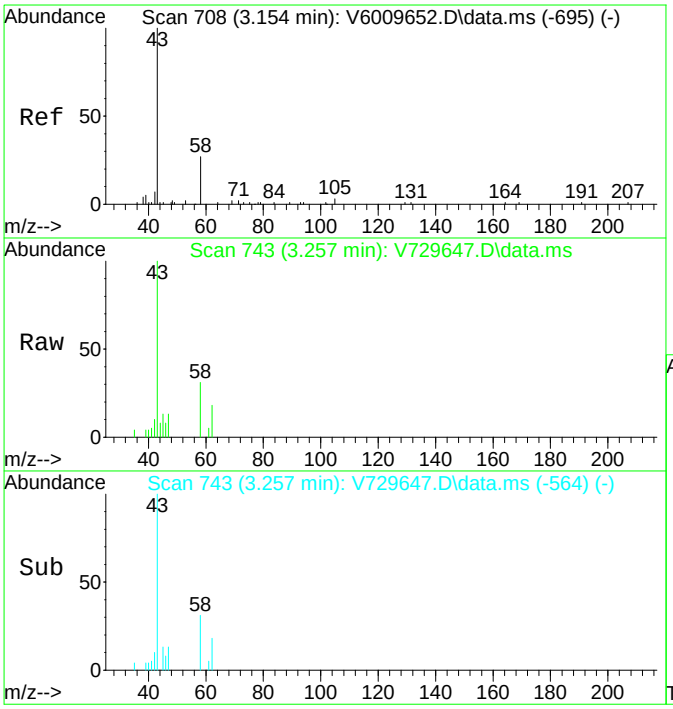


#4
Vinyl Chloride
Concen: 1.14 ppb
RT: 1.872 min Scan# 245
Delta R.T. 0.000 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 62 Resp: 9828

Ion	Ratio	Lower	Upper
62	100		
62	100.0	65.0	135.0
64	32.3	20.2	42.0

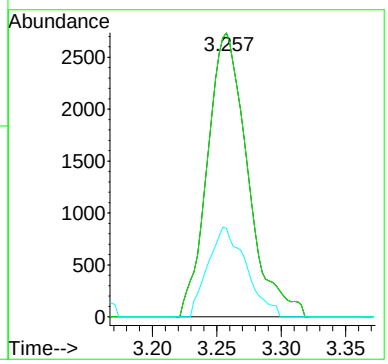


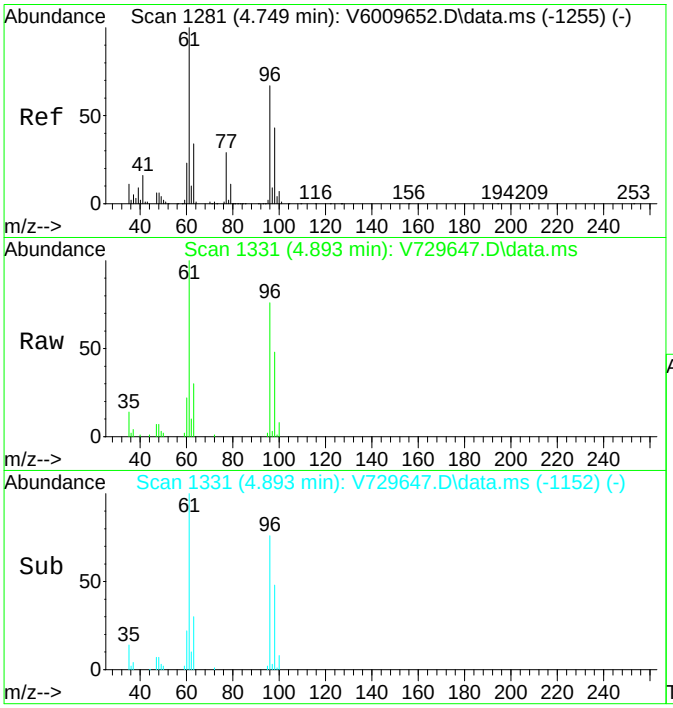


#12
Acetone
Concen: 2.91 ppb
RT: 3.257 min Scan# 743
Delta R.T. -0.003 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 43 Resp: 5941

Ion	Ratio	Lower	Upper
43	100		
43	100.0	80.0	120.0
58	0.0	0.0	0.0

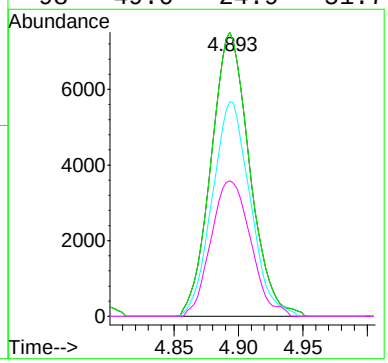


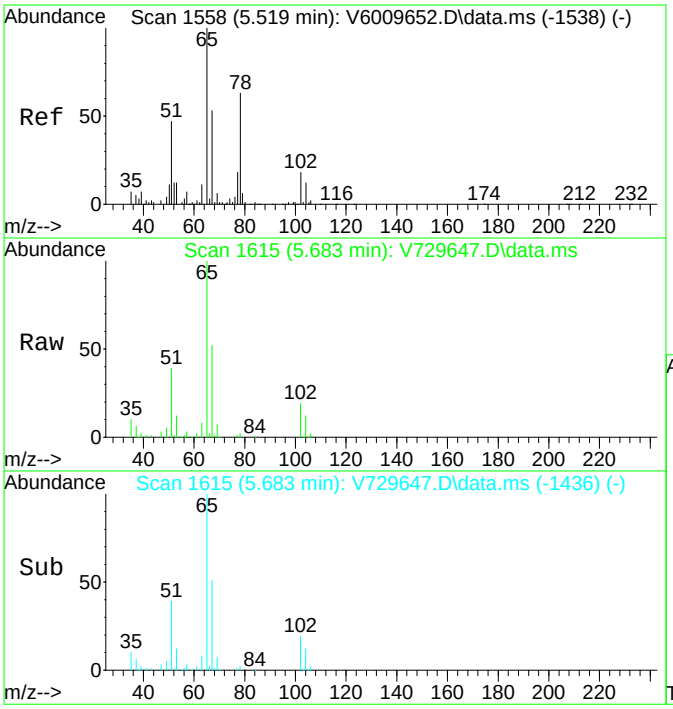


#25
cis-1,2-Dichloroethylene
Concen: 1.16 ppb
RT: 4.893 min Scan# 1331
Delta R.T. -0.003 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 61 Resp: 15632

Ion	Ratio	Lower	Upper
61	100		
61	100.0	65.0	135.0
96	74.4	37.8	78.4
98	49.0	24.9	51.7

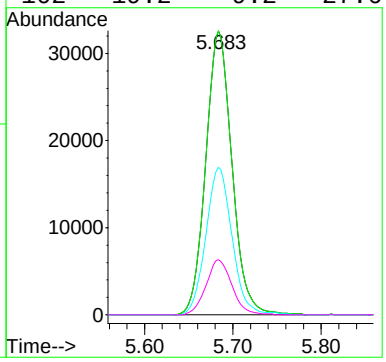


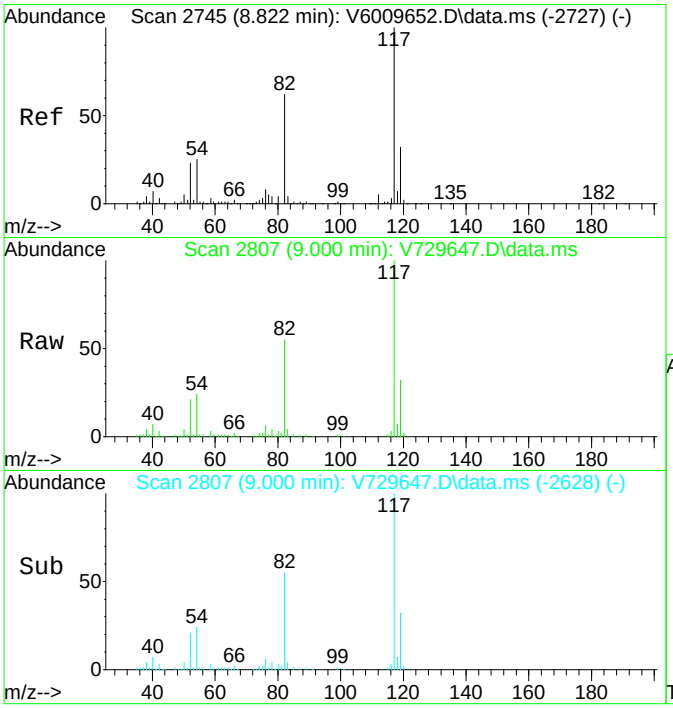


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.63 ppb
RT: 5.683 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 65 Resp: 67414

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.5	33.0	68.6
102	19.2	9.2	27.6

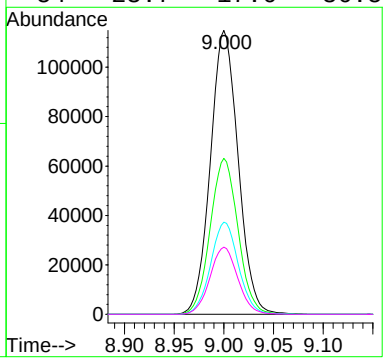


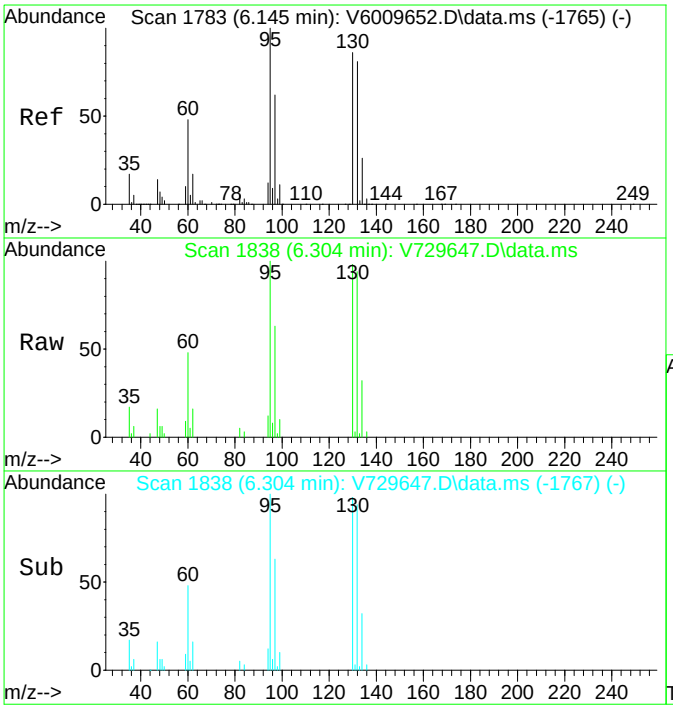


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion:117 Resp: 224113

Ion	Ratio	Lower	Upper
117	100		
82	55.1	35.9	74.7
119	32.4	20.8	43.2
54	23.7	17.6	36.5

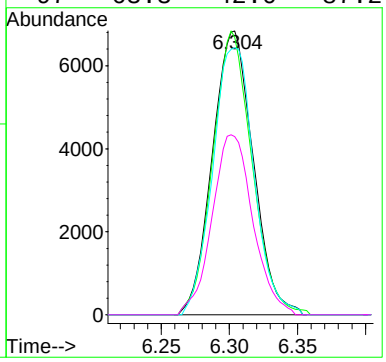


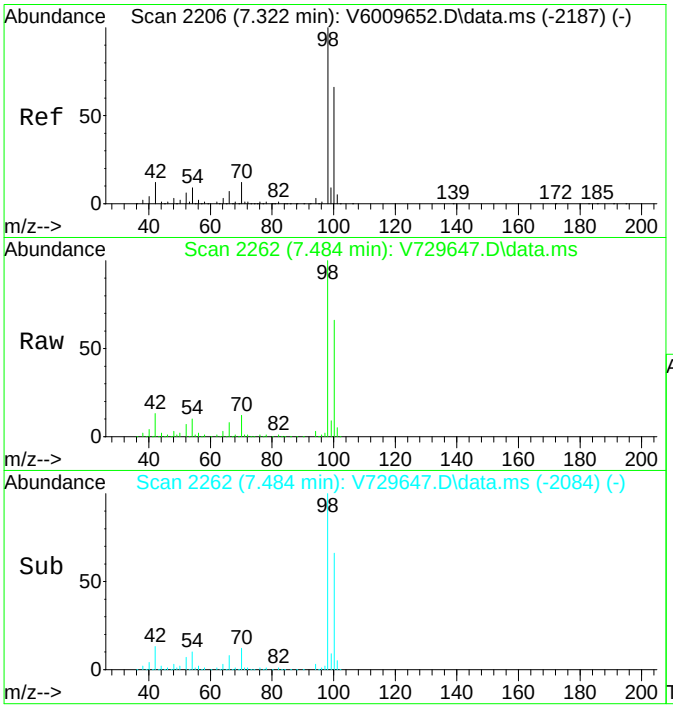


#41
Trichloroethylene
Concen: 1.50 ppb
RT: 6.304 min Scan# 1838
Delta R.T. -0.003 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 95 Resp: 14284

Ion	Ratio	Lower	Upper
95	100		
130	96.0	61.1	126.9
132	95.2	62.0	128.8
97	63.3	42.0	87.2

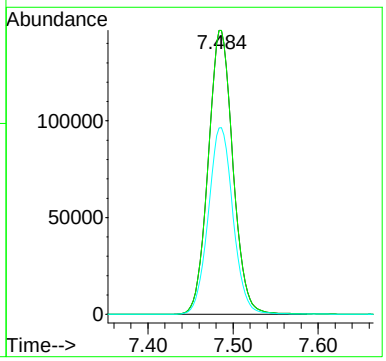


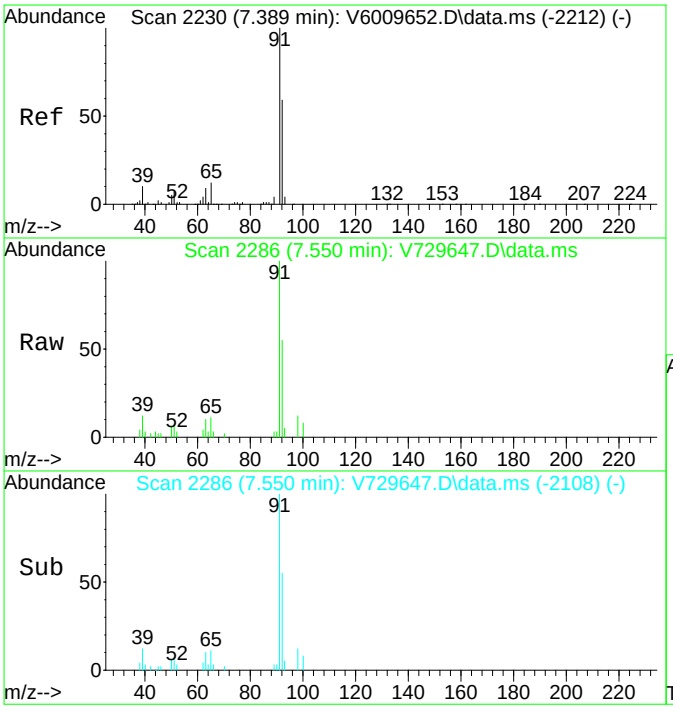


#51
Toluene-d8 (SURR)
Concen: 9.65 ppb
RT: 7.484 min Scan# 2262
Delta R.T. -0.006 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 98 Resp: 295939

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	66.0	43.4	90.2

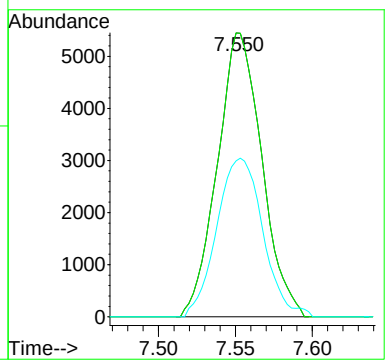


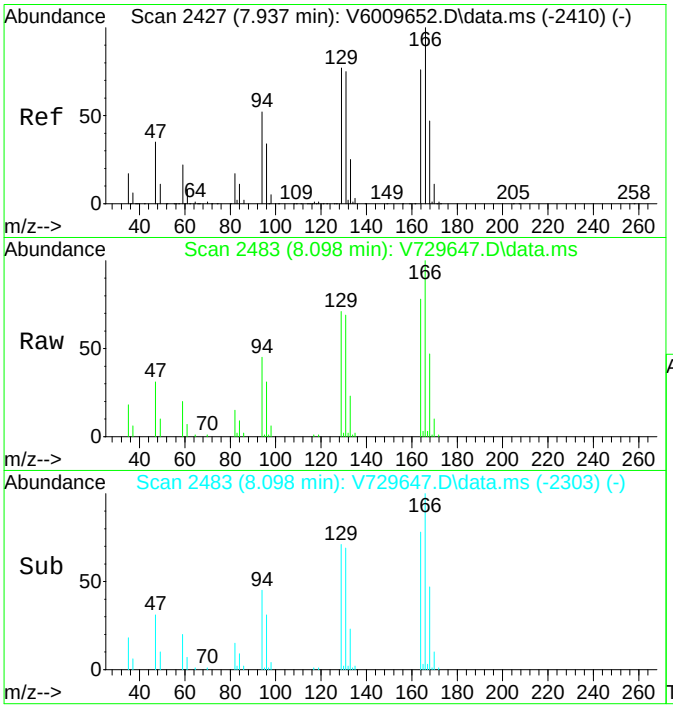


#52
Toluene
Concen: 0.30 ppb
RT: 7.550 min Scan# 2286
Delta R.T. -0.006 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 91 Resp: 10950

Ion	Ratio	Lower	Upper
91	100		
91	100.0	65.0	135.0
92	58.0	38.4	79.7

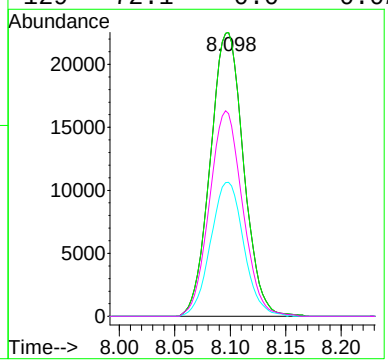


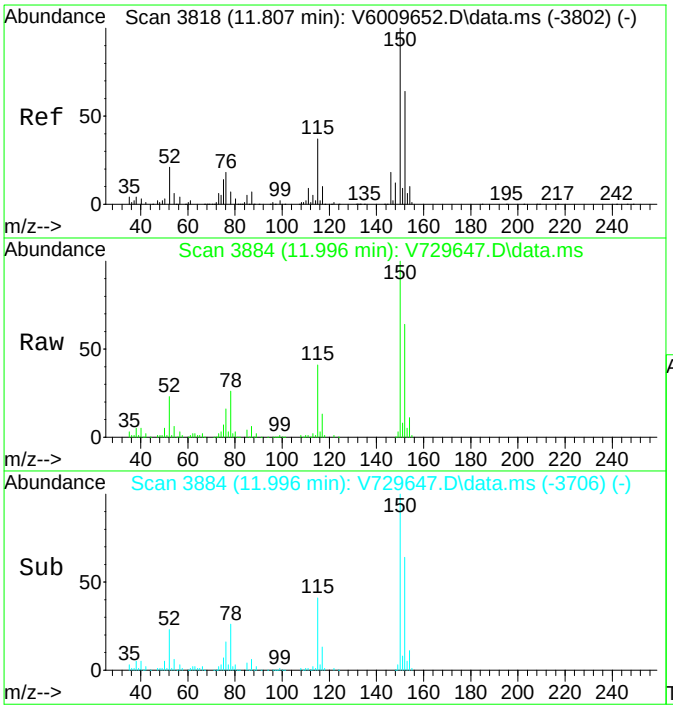


#56
Tetrachloroethylene
Concen: 3.82 ppb
RT: 8.098 min Scan# 2483
Delta R.T. 0.000 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion:166 Resp: 47134

Ion	Ratio	Lower	Upper
166	100		
166	100.0	65.0	135.0
168	0.0	0.0	0.0
129	72.1	0.0	0.0#

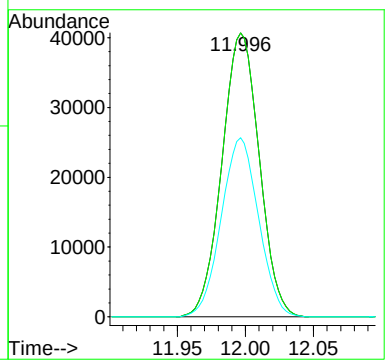


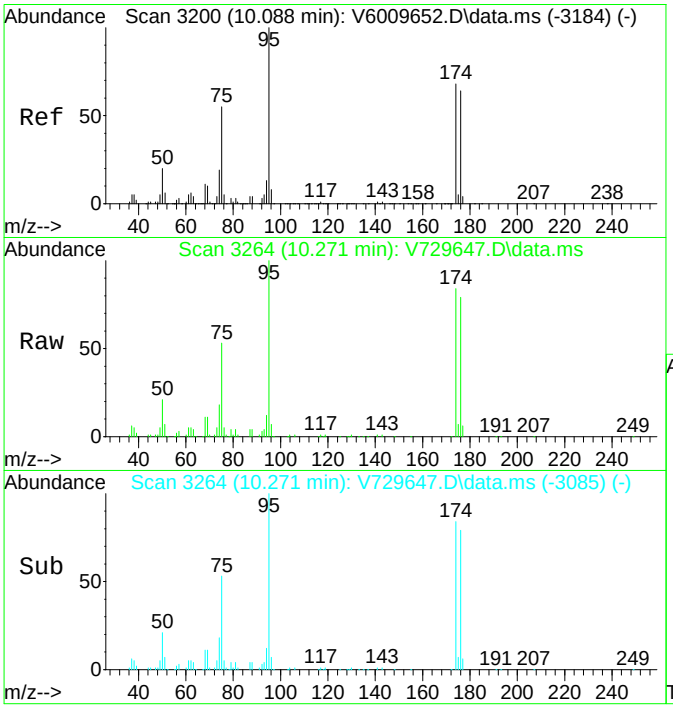


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion:152 Resp: 77557

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	63.2	33.7	101.0

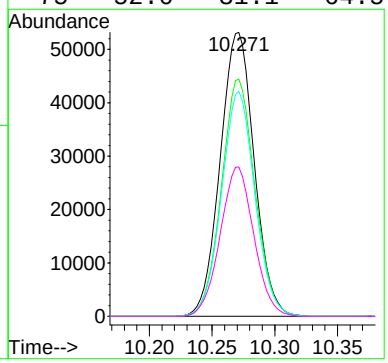




#70
p-Bromofluorobenzene (SURR)
Concen: 10.11 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729647.D
Acq: 31 Oct 2018 8:19 pm

Tgt Ion: 95 Resp: 100443

Ion	Ratio	Lower	Upper
95	100		
174	82.4	49.1	102.1
176	77.8	47.7	99.1
75	52.0	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW15_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-07 File ID: V729648.D

Sampled: 10/25/18 15:35 Prepared: 10/31/18 07:30 Analyzed: 10/31/18 20:51

Solids: Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

Batch: BJ81730 Sequence: Y8K0116 Calibration: YI80021 Instrument: MSVOA7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.00	U
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.560	
156-59-2	cis-1,2-Dichloroethylene	1	0.500	U
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	8.29	
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.500	U
79-01-6	Trichloroethylene	1	0.500	U
75-01-4	Vinyl Chloride	1	0.500	U
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.8	108	69 - 130	
SURR: Toluene-d8	10.0	9.50	95.0	81 - 117	
SURR: p-Bromofluorobenzene	10.0	10.2	102	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	58975	5.959	65709	5.956	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

MW15_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-07	File ID:	V729648.D
Sampled:	10/25/18 15:35	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 20:51
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	231575	9	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	79416	11.996	100688	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729648.D
Acq On : 31 Oct 2018 8:51 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-07
Misc : QBV7103118A 8260 M A
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Nov 01 12:47:07 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

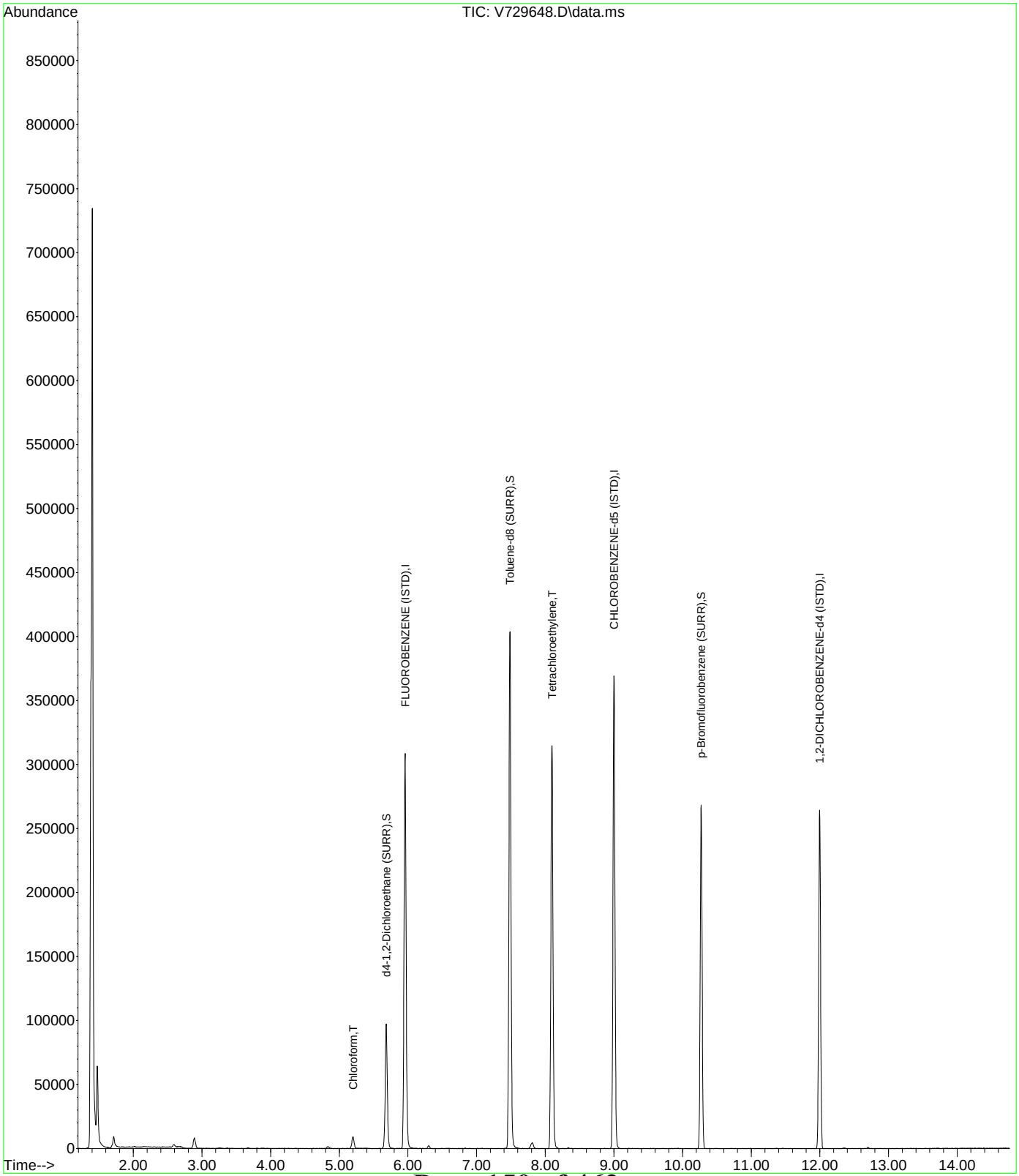
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) FLUOROBENZENE (ISTD)	5.959	70	58975	10.00	ppb	# 0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	231575	10.00	ppb	0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	79416	10.00	ppb	0.00
System Monitoring Compounds						
34) d4-1,2-Dichloroethane ...	5.683	65	69664	10.81	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 108.10%			
51) Toluene-d8 (SURR)	7.486	98	300766	9.50	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.00%			
70) p-Bromofluorobenzene (...	10.271	95	103523	10.17	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.70%			
Target Compounds						Qvalue
30) Chloroform	5.199	83	7731	0.56	ppb	# 100
56) Tetrachloroethylene	8.098	166	105735	8.29	ppb	# 100

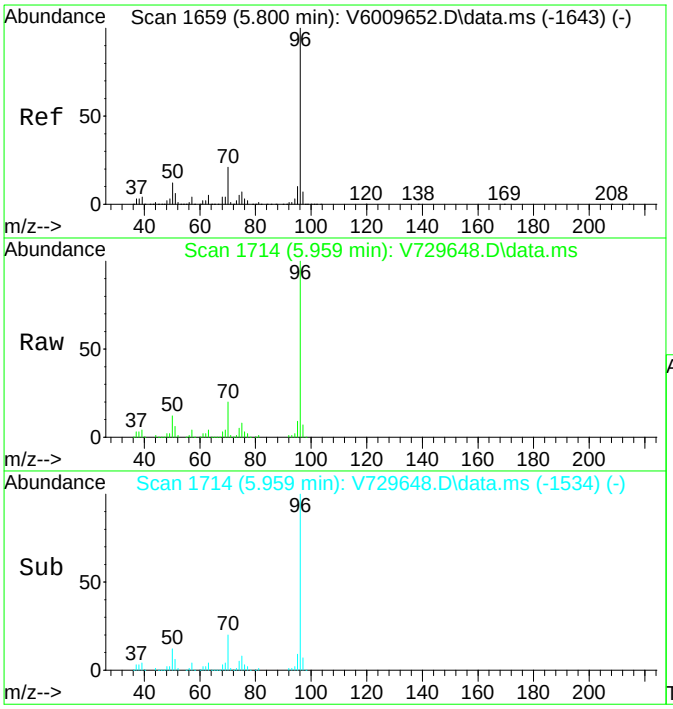
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729648.D
Acq On : 31 Oct 2018 8:51 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-07
Misc : QBV7103118A 8260 M A
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Nov 01 12:47:07 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

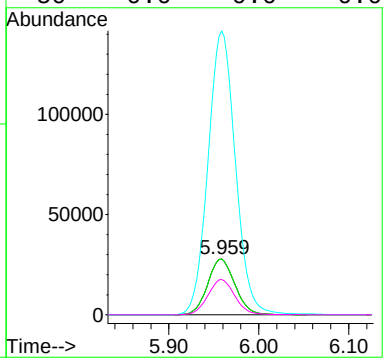


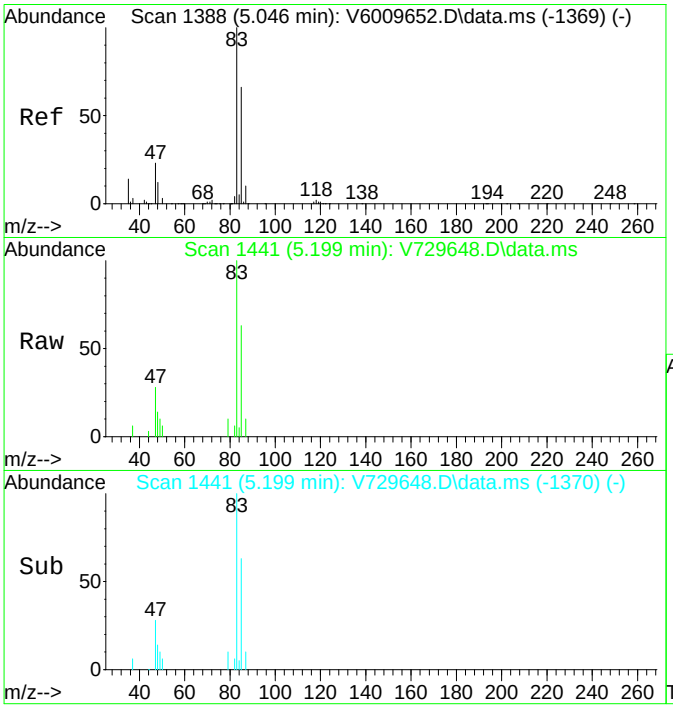


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729648.D
Acq: 31 Oct 2018 8:51 pm

Tgt Ion: 70 Resp: 58975

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	508.9	323.6	672.2
50	0.0	0.0	0.0

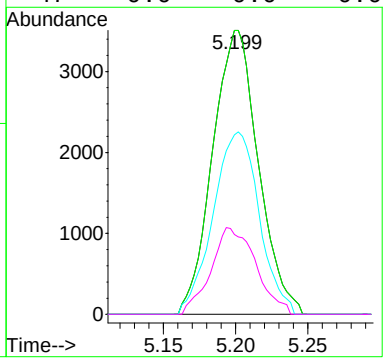


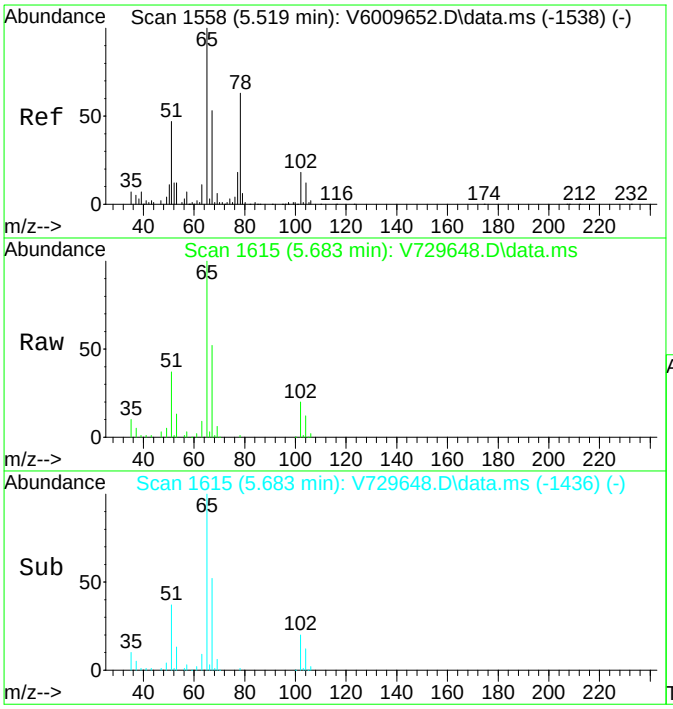


#30
Chloroform
Concen: 0.56 ppb
RT: 5.199 min Scan# 1441
Delta R.T. -0.003 min
Lab File: V729648.D
Acq: 31 Oct 2018 8:51 pm

Tgt Ion: 83 Resp: 7731

Ion	Ratio	Lower	Upper
83	100		
83	100.0	65.0	135.0
85	64.7	41.8	86.8
47	0.0	0.0	0.0

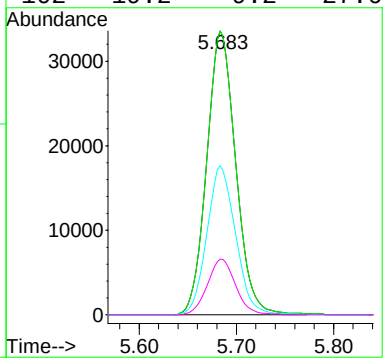


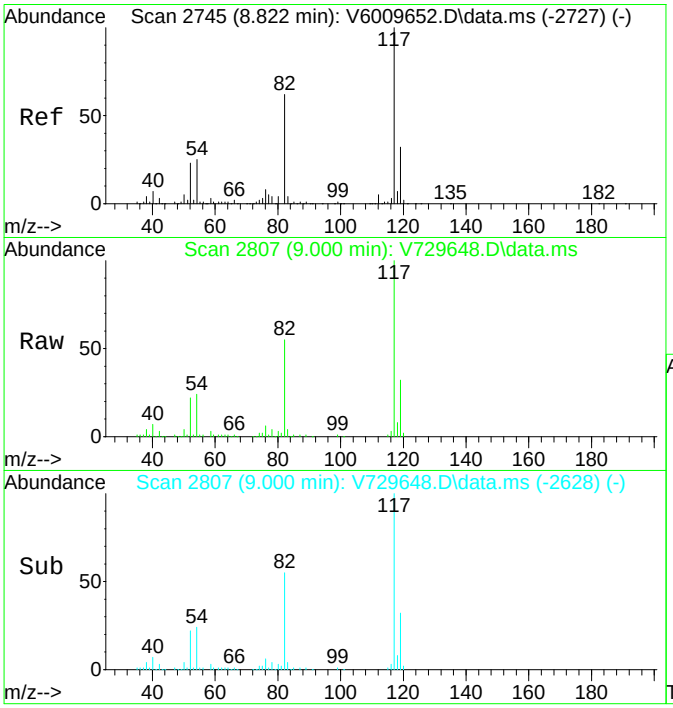


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.81 ppb
RT: 5.683 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729648.D
Acq: 31 Oct 2018 8:51 pm

Tgt Ion: 65 Resp: 69664

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	52.0	33.0	68.6
102	19.2	9.2	27.6

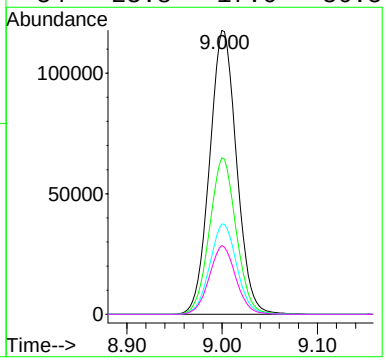


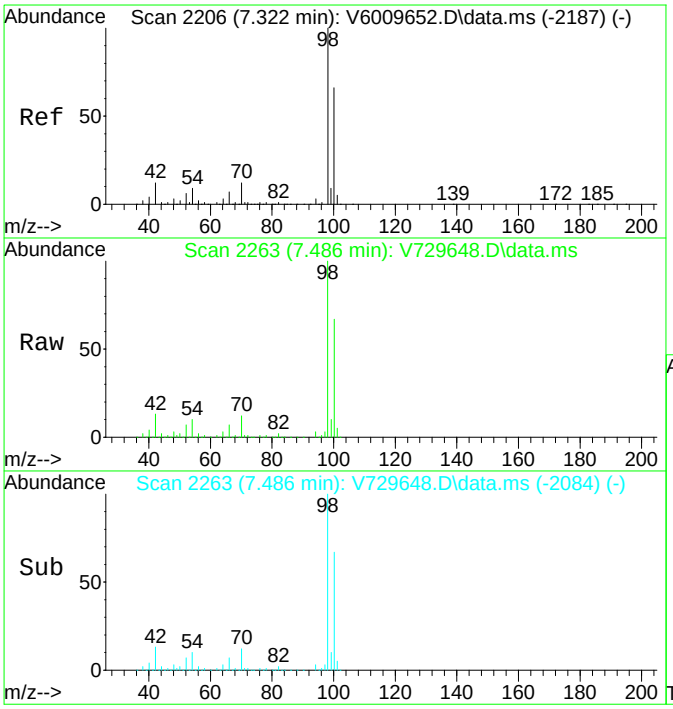


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729648.D
Acq: 31 Oct 2018 8:51 pm

Tgt Ion:117 Resp: 231575

Ion	Ratio	Lower	Upper
117	100		
82	54.6	35.9	74.7
119	32.0	20.8	43.2
54	23.8	17.6	36.5

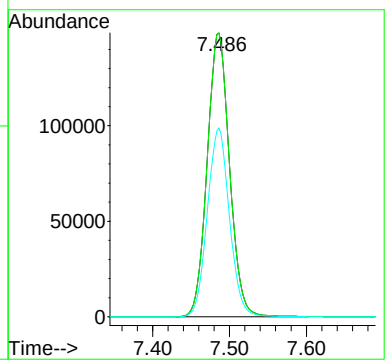


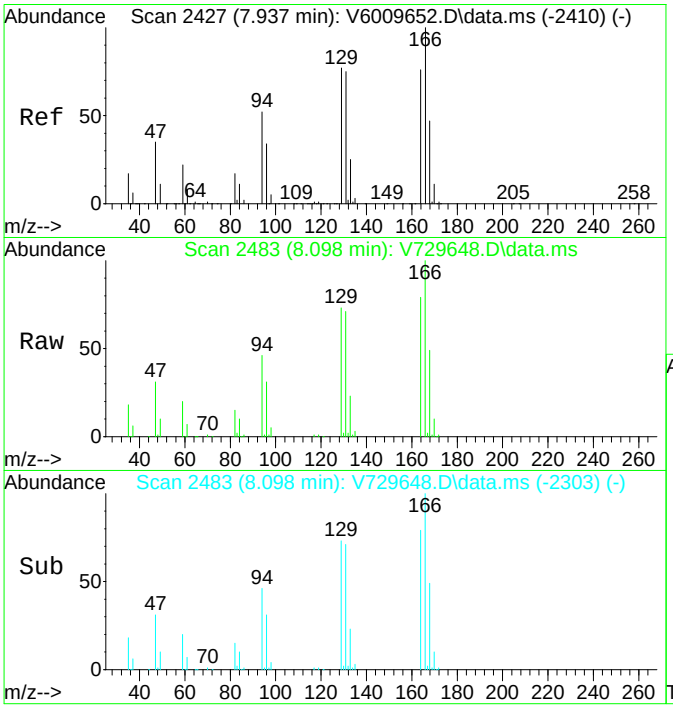


#51
Toluene-d8 (SURR)
Concen: 9.50 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729648.D
Acq: 31 Oct 2018 8:51 pm

Tgt Ion: 98 Resp: 300766

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	65.8	43.4	90.2

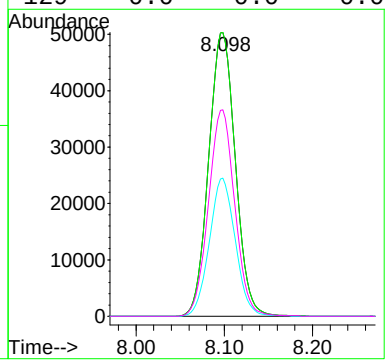


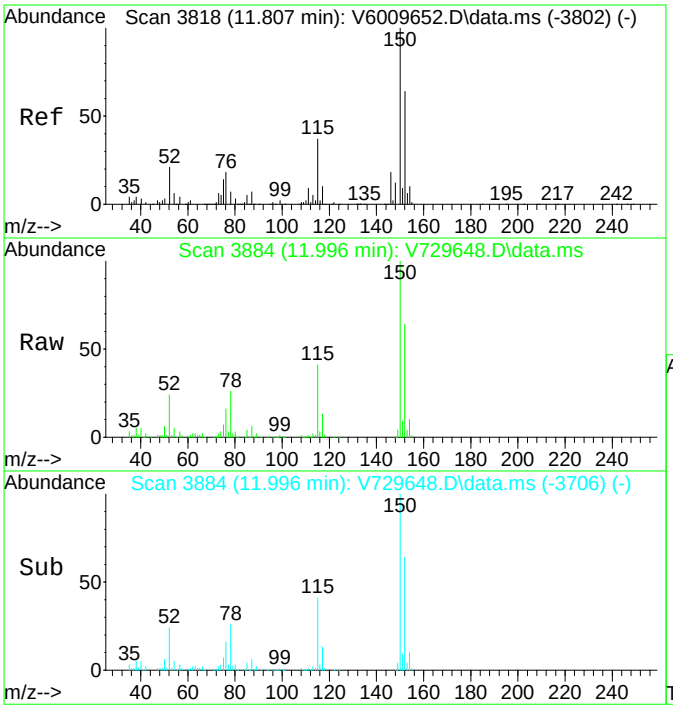


#56
Tetrachloroethylene
Concen: 8.29 ppb
RT: 8.098 min Scan# 2483
Delta R.T. -0.000 min
Lab File: V729648.D
Acq: 31 Oct 2018 8:51 pm

Tgt Ion:166 Resp: 105735

Ion	Ratio	Lower	Upper
166	100		
166	100.0	65.0	135.0
168	47.4	0.0	0.0#
129	0.0	0.0	0.0

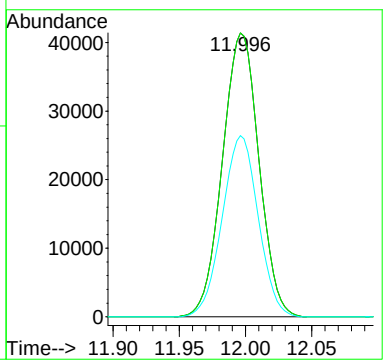


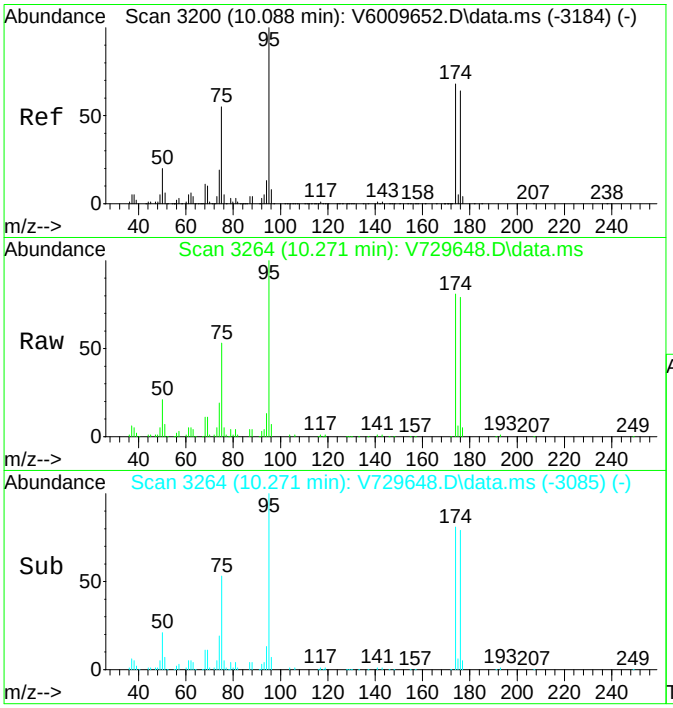


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729648.D
Acq: 31 Oct 2018 8:51 pm

Tgt Ion:152 Resp: 79416

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	63.0	33.7	101.0

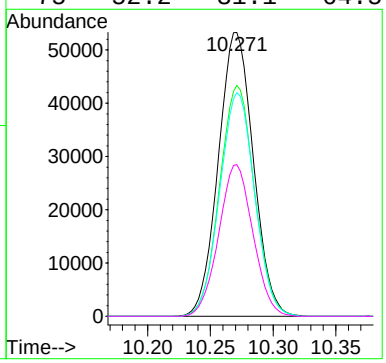




#70
p-Bromofluorobenzene (SURR)
Concen: 10.17 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729648.D
Acq: 31 Oct 2018 8:51 pm

Tgt Ion: 95 Resp: 103523

Ion	Ratio	Lower	Upper
95	100		
174	81.0	49.1	102.1
176	78.5	47.7	99.1
75	52.2	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

DUP01_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-08 File ID: V729649.D

Sampled: 10/25/18 00:00 Prepared: 10/31/18 07:30 Analyzed: 10/31/18 21:23

Solids: Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

Batch: BJ81730 Sequence: Y8K0116 Calibration: YI80021 Instrument: MSVOA7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.00	U
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.500	U
156-59-2	cis-1,2-Dichloroethylene	1	14.6	
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	7.81	
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.500	U
79-01-6	Trichloroethylene	1	2.25	
75-01-4	Vinyl Chloride	1	3.52	
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	11.0	110	69 - 130	
SURR: Toluene-d8	10.0	9.54	95.4	81 - 117	
SURR: p-Bromofluorobenzene	10.0	10.1	101	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	58506	5.959	65709	5.956	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

DUP01_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-08	File ID:	V729649.D
Sampled:	10/25/18 00:00	Prepared:	10/31/18 07:30	Analyzed:	10/31/18 21:23
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	227330	9	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	79429	11.996	100688	11.996	

* Values outside of QC limits

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729649.D
Acq On : 31 Oct 2018 9:23 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-08
Misc : QBV7103118A 8260 M A
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Nov 01 12:47:57 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

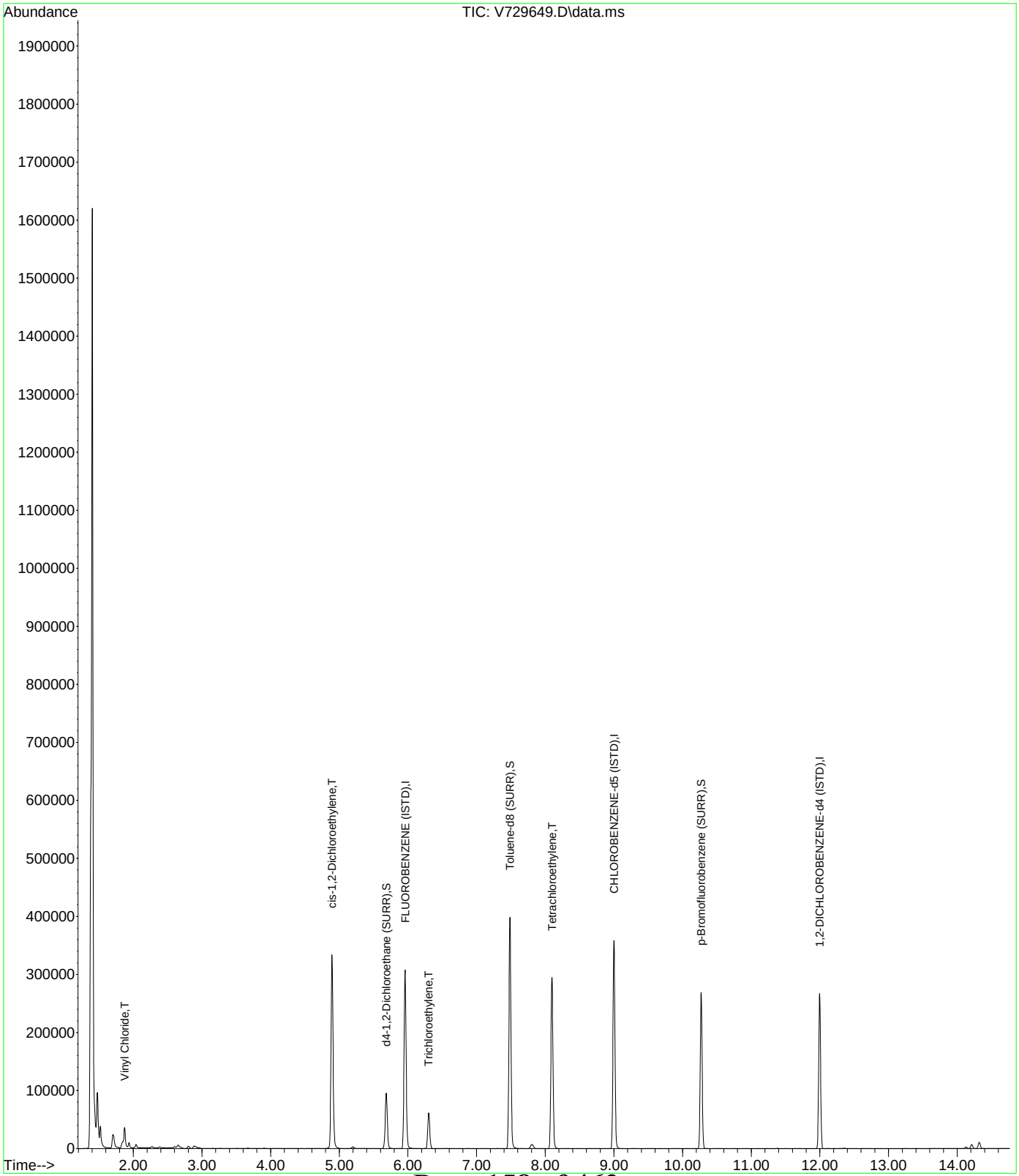
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	58506	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	227330	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	79429	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	70057	10.96	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.60%				
51) Toluene-d8 (SURR)	7.486	98	296739	9.54	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.40%				
70) p-Bromofluorobenzene (...	10.271	95	102776	10.10	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.00%				
Target Compounds							Qvalue
4) Vinyl Chloride	1.874	62	30699	3.52	ppb		100
25) cis-1,2-Dichloroethylene	4.893	61	197445	14.55	ppb		89
41) Trichloroethylene	6.301	95	21724	2.25	ppb		97
56) Tetrachloroethylene	8.098	166	97782	7.81	ppb	#	100

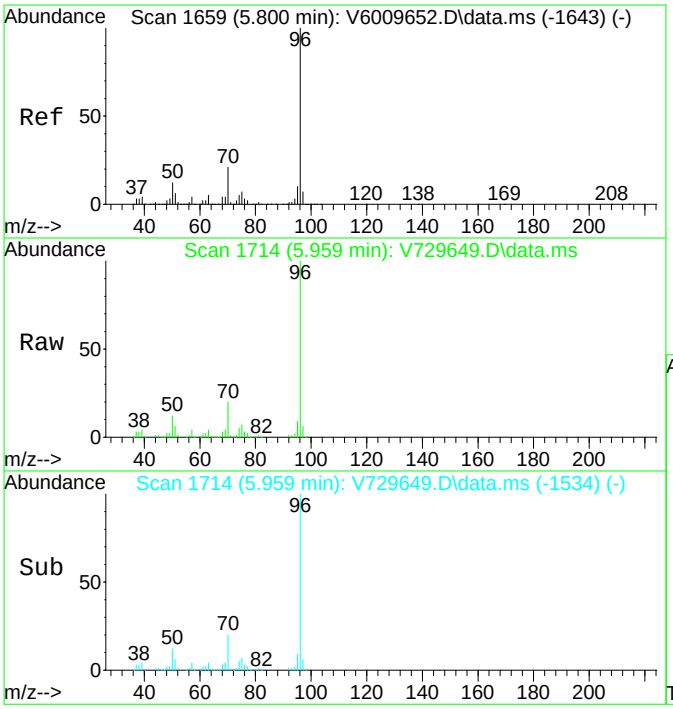
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729649.D
Acq On : 31 Oct 2018 9:23 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-08
Misc : QBV7103118A 8260 M A
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Nov 01 12:47:57 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

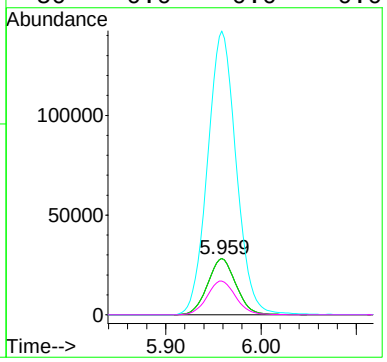


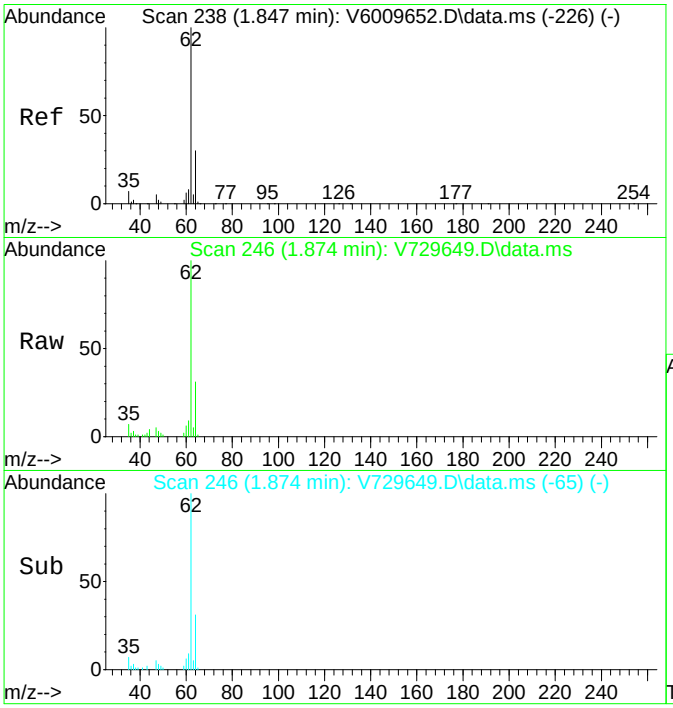


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion: 70 Resp: 58506

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	508.9	323.6	672.2
50	0.0	0.0	0.0

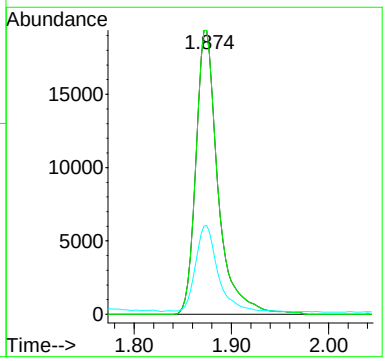


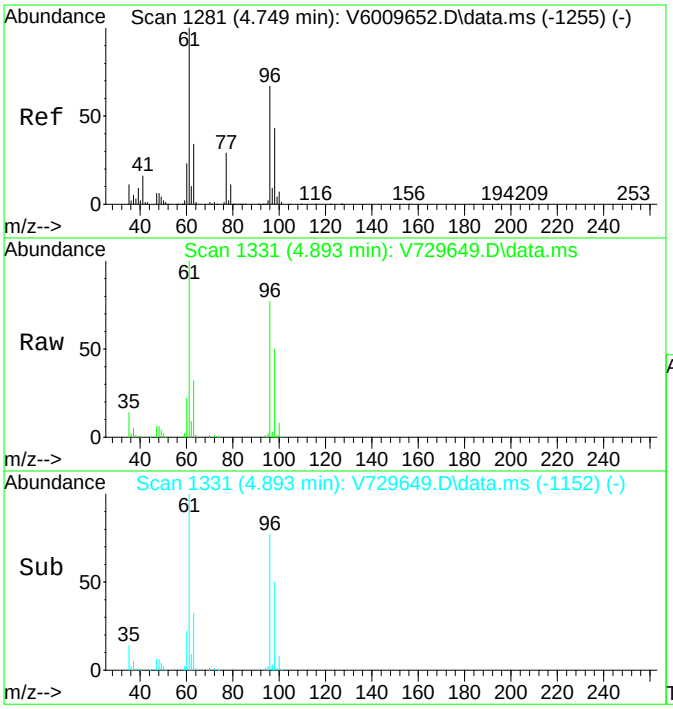


#4
Vinyl Chloride
Concen: 3.52 ppb
RT: 1.874 min Scan# 246
Delta R.T. 0.003 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion: 62 Resp: 30699

Ion	Ratio	Lower	Upper
62	100		
62	100.0	65.0	135.0
64	31.1	20.2	42.0

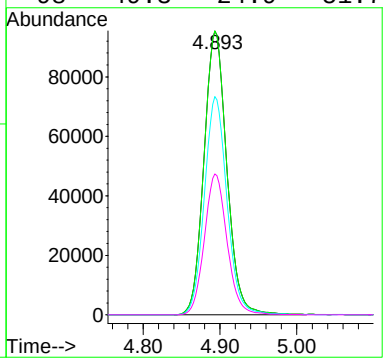


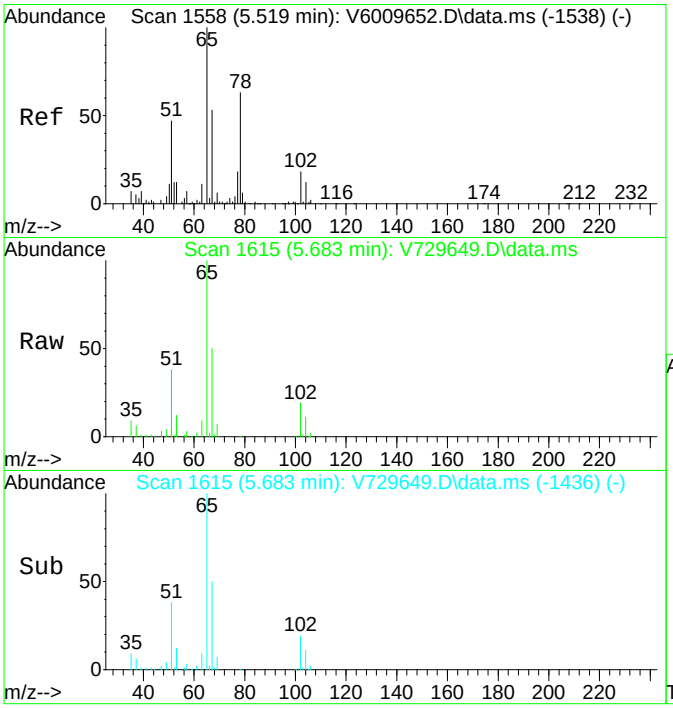


#25
cis-1,2-Dichloroethylene
Concen: 14.55 ppb
RT: 4.893 min Scan# 1331
Delta R.T. -0.003 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion: 61 Resp: 197445

Ion	Ratio	Lower	Upper
61	100		
61	100.0	65.0	135.0
96	76.2	37.8	78.4
98	49.3	24.9	51.7

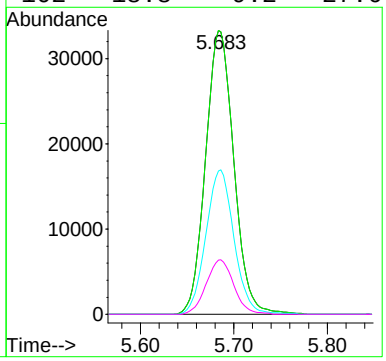


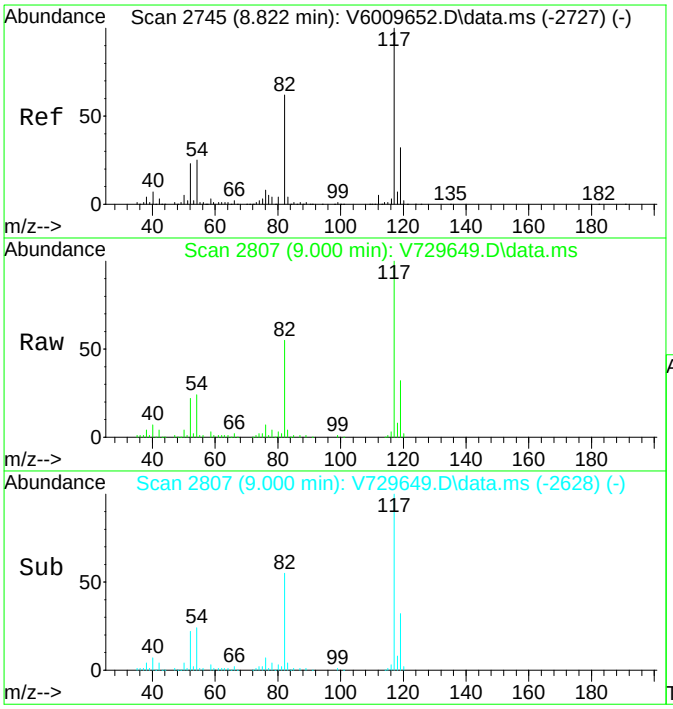


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.96 ppb
RT: 5.683 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion: 65 Resp: 70057

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	50.7	33.0	68.6
102	18.8	9.2	27.6

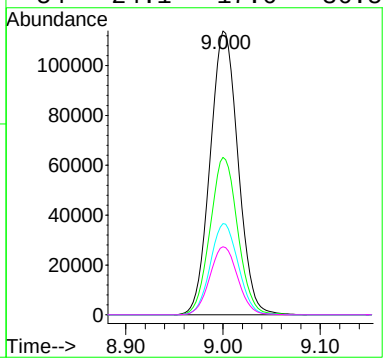


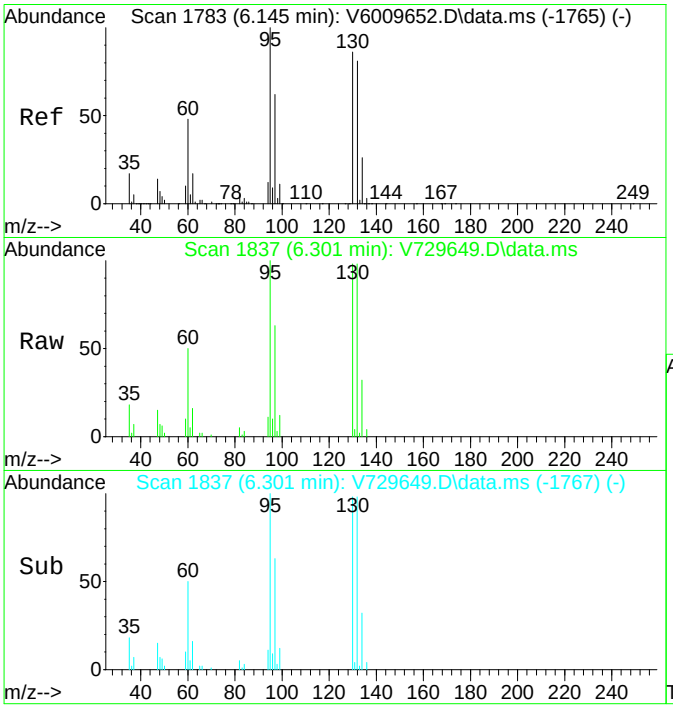


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion:117 Resp: 227330

Ion	Ratio	Lower	Upper
117	100		
82	55.1	35.9	74.7
119	32.1	20.8	43.2
54	24.1	17.6	36.5

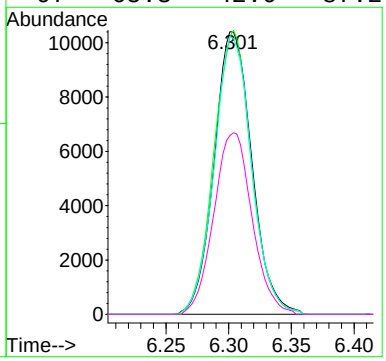


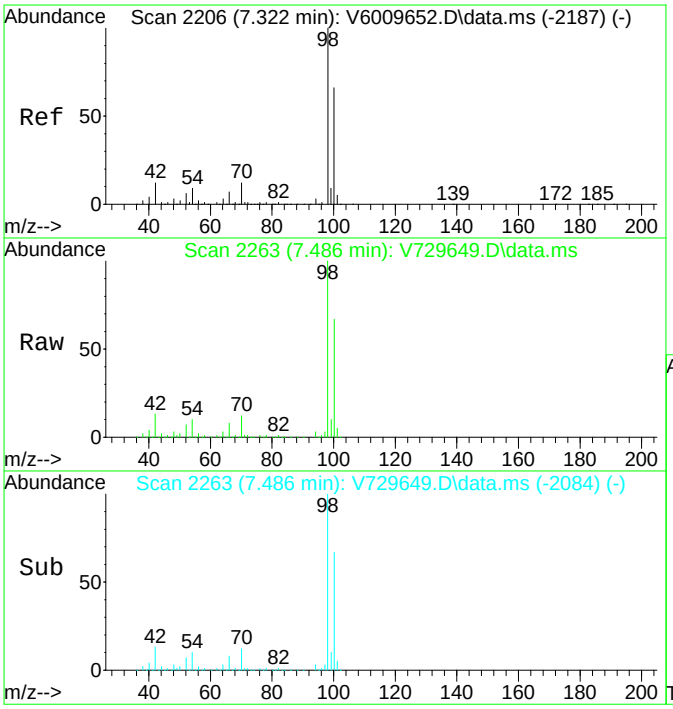


#41
Trichloroethylene
Concen: 2.25 ppb
RT: 6.301 min Scan# 1837
Delta R.T. -0.006 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion: 95 Resp: 21724

Ion	Ratio	Lower	Upper
95	100		
130	99.9	61.1	126.9
132	97.4	62.0	128.8
97	65.3	42.0	87.2

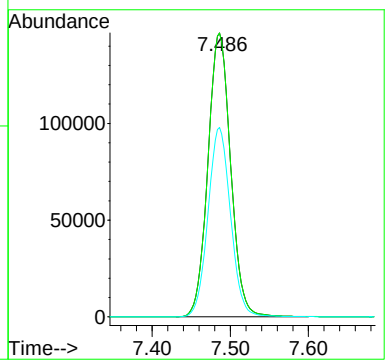


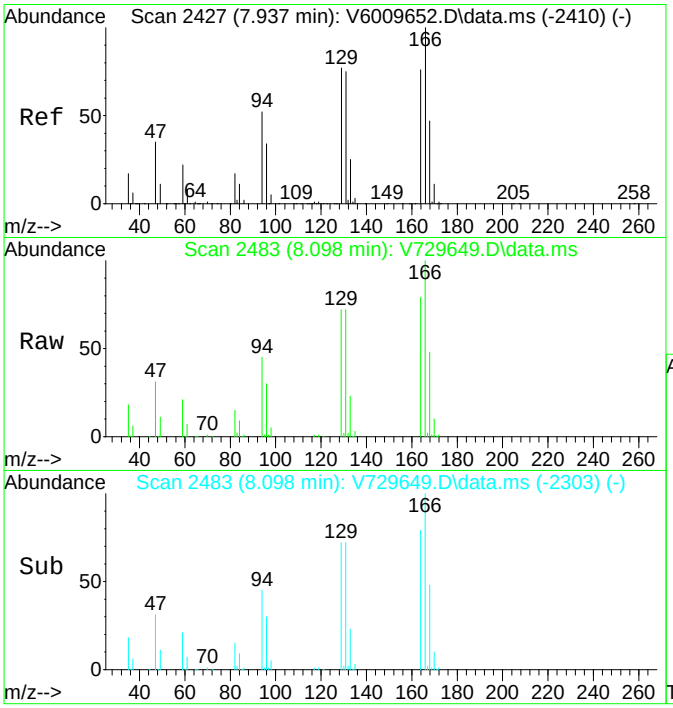


#51
Toluene-d8 (SURR)
Concen: 9.54 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion: 98 Resp: 296739

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	66.2	43.4	90.2

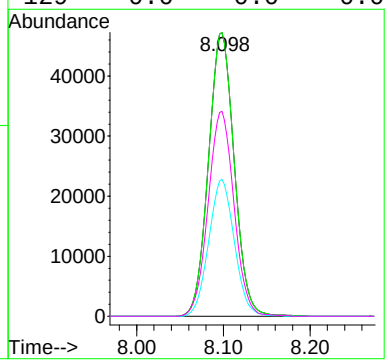


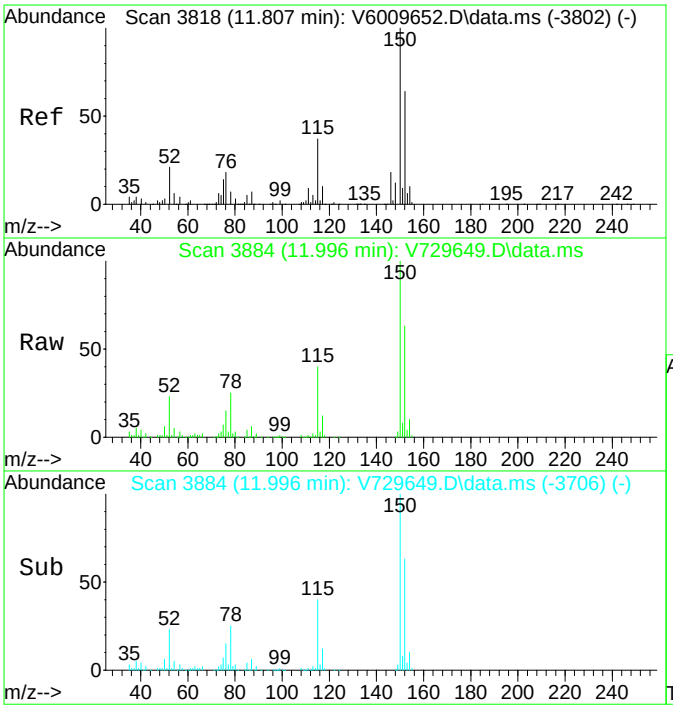


#56
Tetrachloroethylene
Concen: 7.81 ppb
RT: 8.098 min Scan# 2483
Delta R.T. -0.000 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion:166 Resp: 97782

Ion	Ratio	Lower	Upper
166	100		
166	100.0	65.0	135.0
168	48.1	0.0	0.0#
129	0.0	0.0	0.0

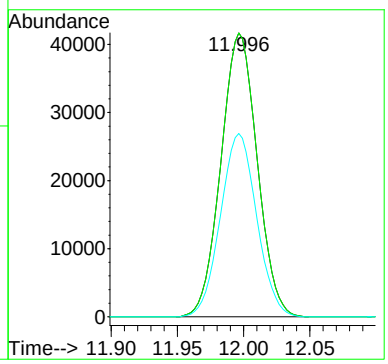


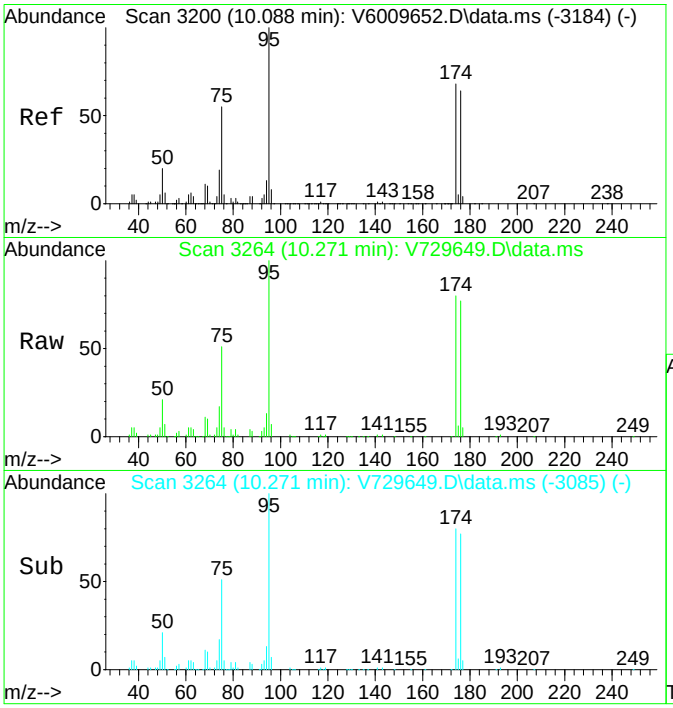


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion:152 Resp: 79429

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	64.5	33.7	101.0

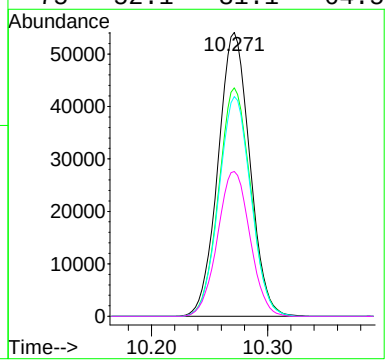




#70
p-Bromofluorobenzene (SURR)
Concen: 10.10 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729649.D
Acq: 31 Oct 2018 9:23 pm

Tgt Ion: 95 Resp: 102776

Ion	Ratio	Lower	Upper
95	100		
174	81.3	49.1	102.1
176	78.4	47.7	99.1
75	52.1	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

TB01_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-09 File ID: V729656.D

Sampled: 10/25/18 16:20 Prepared: 11/01/18 07:30 Analyzed: 11/01/18 12:51

Solids: Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

Batch: BK80021 Sequence: Y8K0121 Calibration: YI80021 Instrument: MSVOA7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.00	U
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.500	U
156-59-2	cis-1,2-Dichloroethylene	1	0.500	U
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	0.500	U
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.500	U
79-01-6	Trichloroethylene	1	0.500	U
75-01-4	Vinyl Chloride	1	0.500	U
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.8	108	69 - 130	
SURR: Toluene-d8	10.0	9.55	95.5	81 - 117	
SURR: p-Bromofluorobenzene	10.0	9.86	98.6	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	62467	5.959	64026	5.959	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

TB01_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-09	File ID:	V729656.D
Sampled:	10/25/18 16:20	Prepared:	11/01/18 07:30	Analyzed:	11/01/18 12:51
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BK80021	Sequence:	Y8K0121	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	240807	9	245464	9	
ISTD: 1,2-Dichlorobenzene-d4	87367	11.996	100160	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729656.D
Acq On : 1 Nov 2018 12:51 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-09
Misc : QBV7110118A 8260 M A
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 01 14:26:29 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

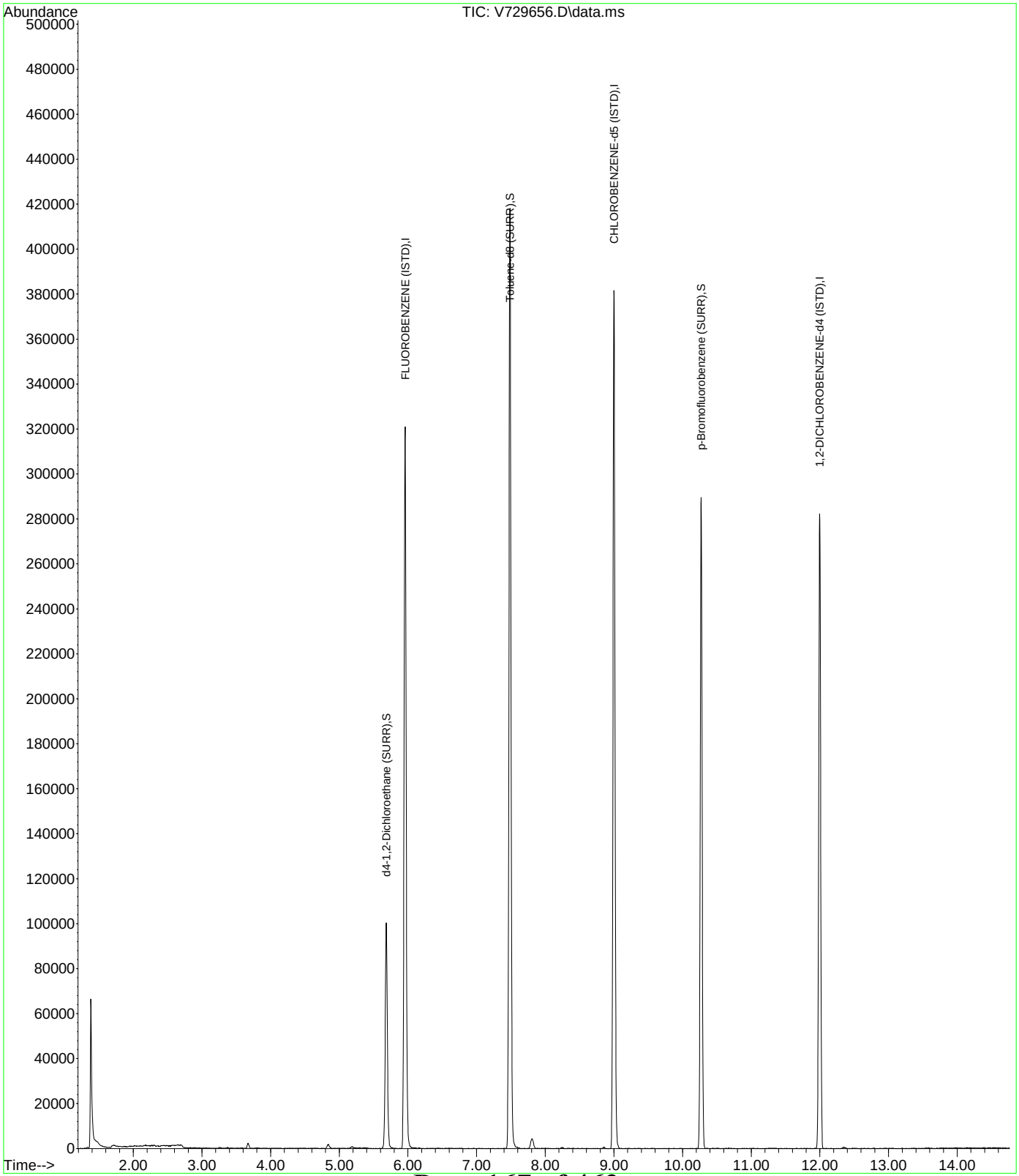
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) FLUOROBENZENE (ISTD)	5.959	70	62467	10.00	ppb	# 0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	240807	10.00	ppb	0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	87367	10.00	ppb	0.00
System Monitoring Compounds						
34) d4-1,2-Dichloroethane ...	5.686	65	73451	10.76	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 107.60%			
51) Toluene-d8 (SURR)	7.486	98	314443	9.55	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.50%			
70) p-Bromofluorobenzene (...	10.271	95	110428	9.86	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.60%			
Target Compounds						Qvalue

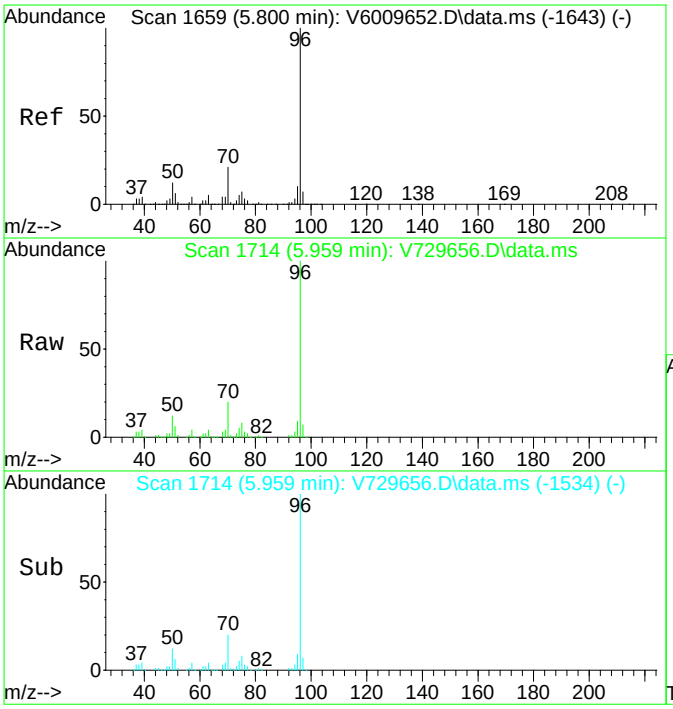
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729656.D
Acq On : 1 Nov 2018 12:51 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-09
Misc : QBV7110118A 8260 M A
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 01 14:26:29 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

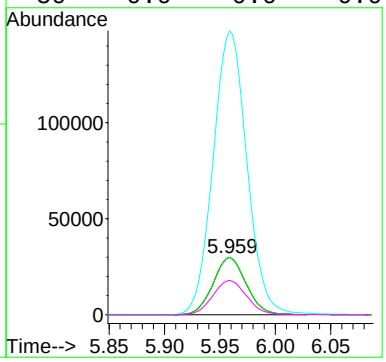


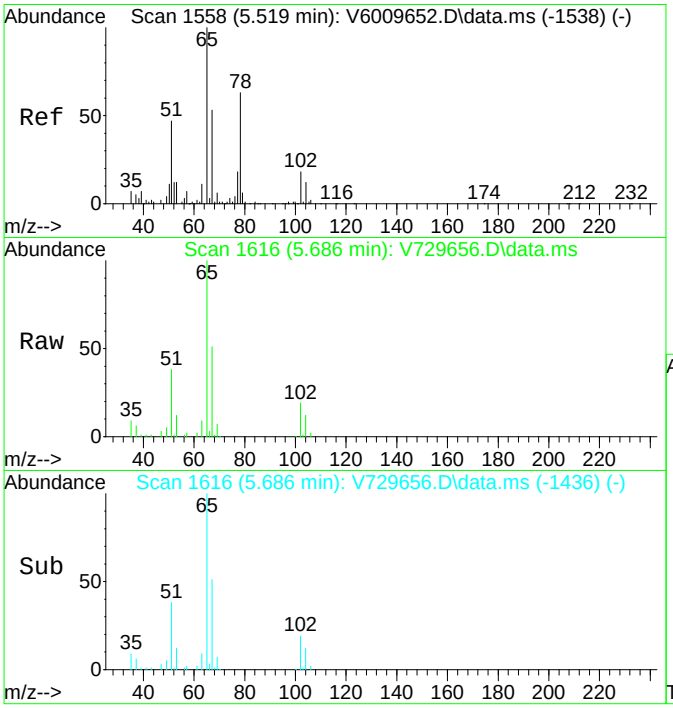


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729656.D
Acq: 1 Nov 2018 12:51 pm

Tgt Ion: 70 Resp: 62467

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	504.4	323.6	672.2
50	0.0	0.0	0.0

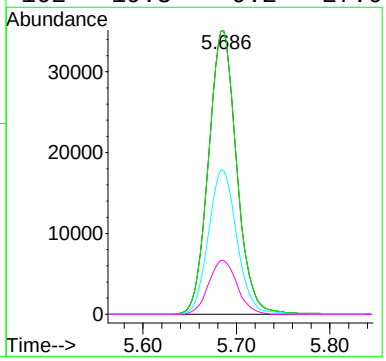


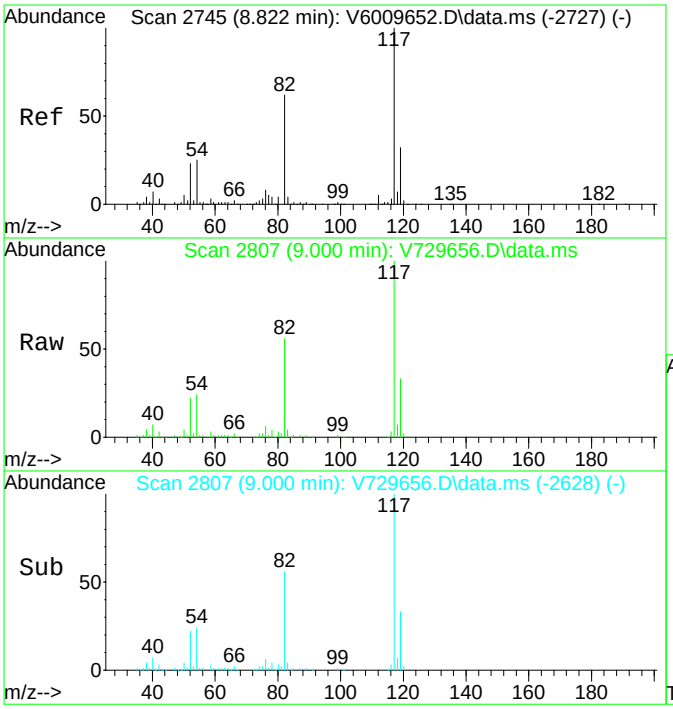


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.76 ppb
RT: 5.686 min Scan# 1616
Delta R.T. -0.000 min
Lab File: V729656.D
Acq: 1 Nov 2018 12:51 pm

Tgt Ion: 65 Resp: 73451

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.6	33.0	68.6
102	19.3	9.2	27.6

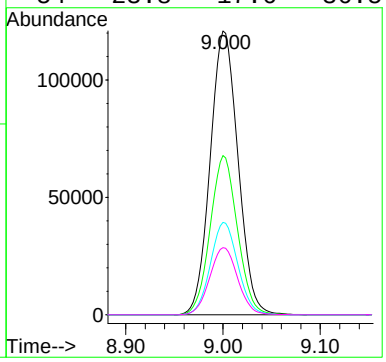


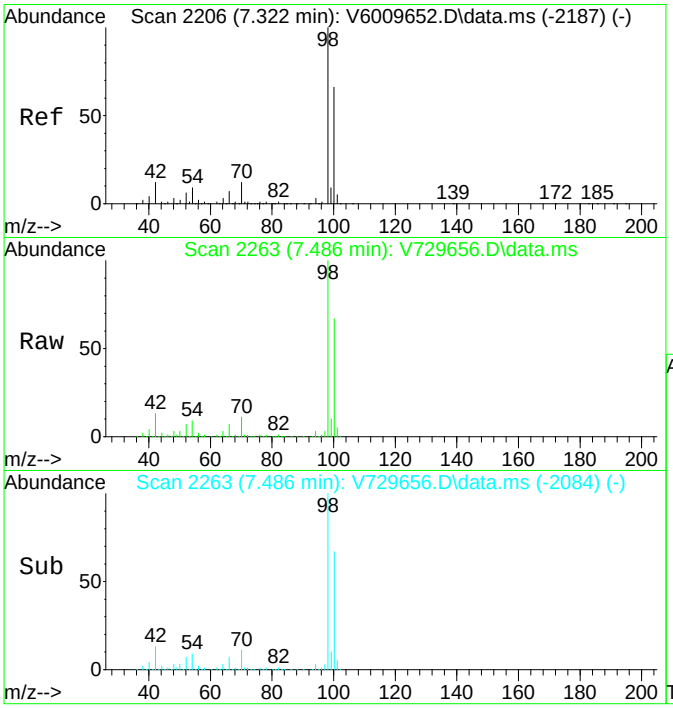


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729656.D
Acq: 1 Nov 2018 12:51 pm

Tgt Ion:117 Resp: 240807

Ion	Ratio	Lower	Upper
117	100		
82	55.0	35.9	74.7
119	32.1	20.8	43.2
54	23.8	17.6	36.5

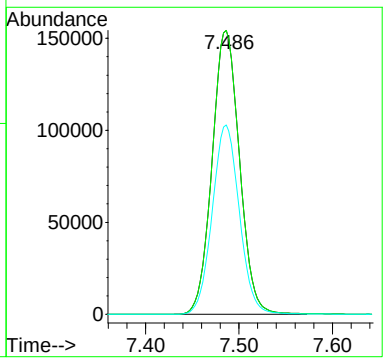


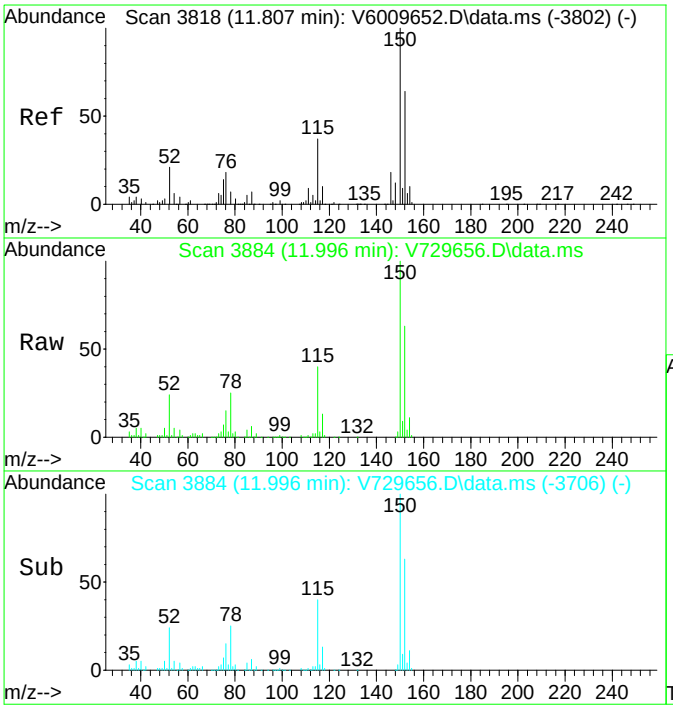


#51
Toluene-d8 (SURR)
Concen: 9.55 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729656.D
Acq: 1 Nov 2018 12:51 pm

Tgt Ion: 98 Resp: 314443

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	66.1	43.4	90.2

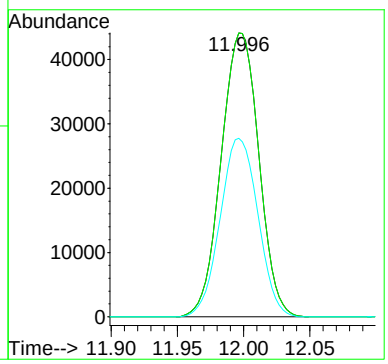


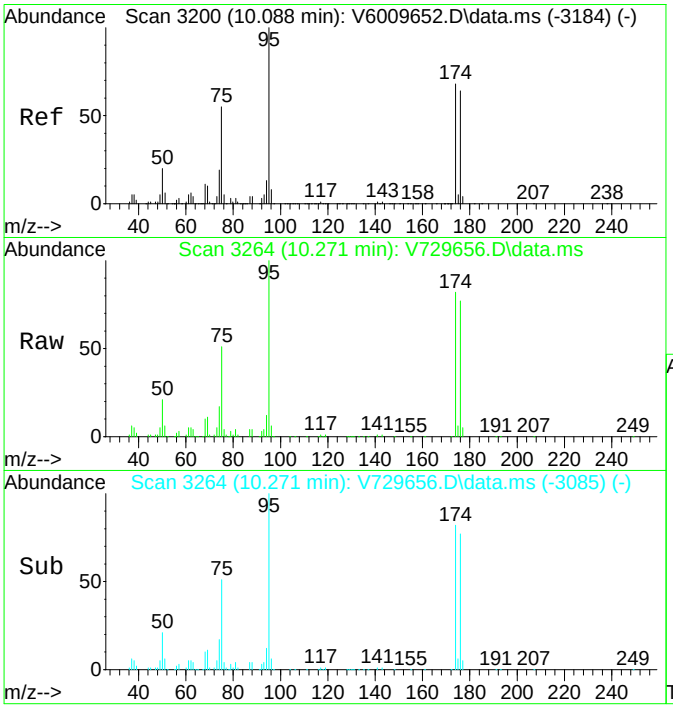


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729656.D
Acq: 1 Nov 2018 12:51 pm

Tgt Ion:152 Resp: 87367

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	63.2	33.7	101.0

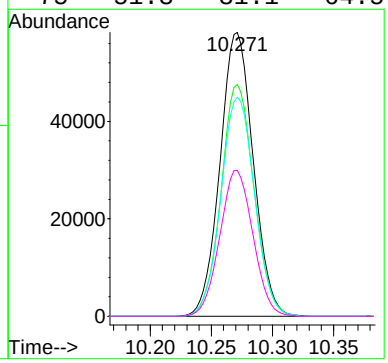




#70
p-Bromofluorobenzene (SURR)
Concen: 9.86 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729656.D
Acq: 1 Nov 2018 12:51 pm

Tgt Ion: 95 Resp: 110428

Ion	Ratio	Lower	Upper
95	100		
174	80.9	49.1	102.1
176	78.0	47.7	99.1
75	51.3	31.1	64.5



FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

FB01_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-10 File ID: V729657.D

Sampled: 10/25/18 07:15 Prepared: 11/01/18 07:30 Analyzed: 11/01/18 13:23

Solids: Preparation: EPA 5030B Initial/Final: 25 mL / 25 mL

Batch: BK80021 Sequence: Y8K0121 Calibration: YI80021 Instrument: MSVOA7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	1	0.500	U
75-34-3	1,1-Dichloroethane	1	0.500	U
75-35-4	1,1-Dichloroethylene	1	0.500	U
95-63-6	1,2,4-Trimethylbenzene	1	0.500	U
95-50-1	1,2-Dichlorobenzene	1	0.500	U
107-06-2	1,2-Dichloroethane	1	0.500	U
108-67-8	1,3,5-Trimethylbenzene	1	0.500	U
541-73-1	1,3-Dichlorobenzene	1	0.500	U
106-46-7	1,4-Dichlorobenzene	1	0.500	U
123-91-1	1,4-Dioxane	1	80.0	U
78-93-3	2-Butanone	1	0.500	U
67-64-1	Acetone	1	2.00	U
71-43-2	Benzene	1	0.500	U
56-23-5	Carbon tetrachloride	1	0.500	U
108-90-7	Chlorobenzene	1	0.500	U
67-66-3	Chloroform	1	0.500	U
156-59-2	cis-1,2-Dichloroethylene	1	0.500	U
100-41-4	Ethyl Benzene	1	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	1	0.500	U
75-09-2	Methylene chloride	1	2.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	0.500	U
103-65-1	n-Propylbenzene	1	0.500	U
95-47-6	o-Xylene	1	0.500	U
179601-23-1	p- & m- Xylenes	1	1.00	U
135-98-8	sec-Butylbenzene	1	0.500	U
98-06-6	tert-Butylbenzene	1	0.500	U
127-18-4	Tetrachloroethylene	1	0.500	U
108-88-3	Toluene	1	0.500	U
156-60-5	trans-1,2-Dichloroethylene	1	0.500	U
79-01-6	Trichloroethylene	1	0.500	U
75-01-4	Vinyl Chloride	1	0.500	U
1330-20-7	Xylenes, Total	1	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	11.0	110	69 - 130	
SURR: Toluene-d8	10.0	9.44	94.4	81 - 117	
SURR: p-Bromofluorobenzene	10.0	9.79	97.9	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	61750	5.959	64026	5.959	

FORM I

ORGANIC ANALYSIS DATA SHEET

EPA 8260C

FB01_102518

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	18J1263-10	File ID:	V729657.D
Sampled:	10/25/18 07:15	Prepared:	11/01/18 07:30	Analyzed:	11/01/18 13:23
Solids:		Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Batch:	BK80021	Sequence:	Y8K0121	Calibration:	YI80021
Instrument:	MSVOA7				

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Chlorobenzene-d5	239741	9	245464	9	
ISTD: 1,2-Dichlorobenzene-d4	87245	11.996	100160	11.996	

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729657.D
Acq On : 1 Nov 2018 1:23 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-10
Misc : QBV7110118A 8260 M A
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 01 14:27:05 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

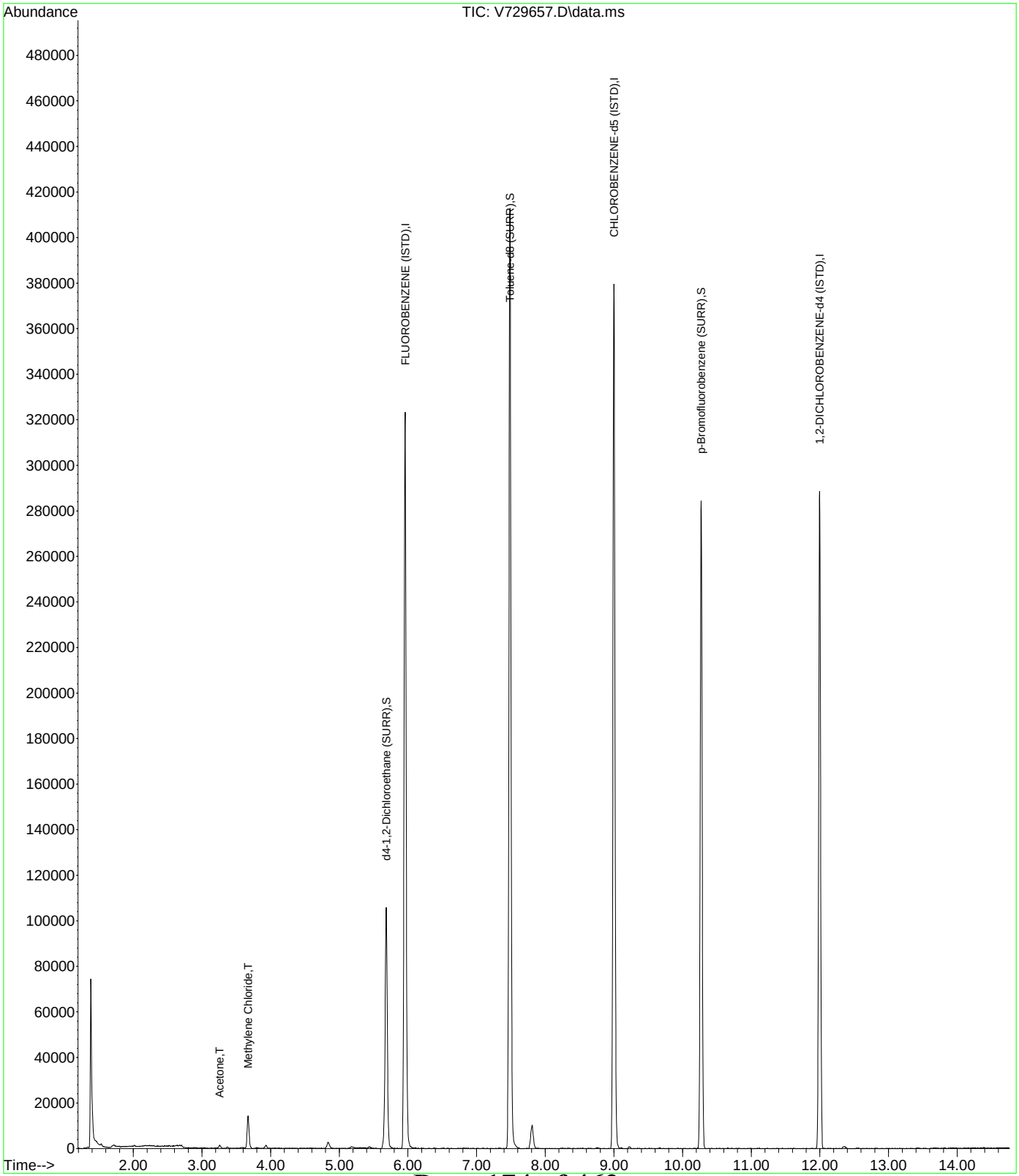
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) FLUOROBENZENE (ISTD)	5.959	70	61750	10.00	ppb	# 0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	239741	10.00	ppb	0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	87245	10.00	ppb	0.00
System Monitoring Compounds						
34) d4-1,2-Dichloroethane ...	5.683	65	73897	10.95	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.50%			
51) Toluene-d8 (SURR)	7.486	98	309434	9.44	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.40%			
70) p-Bromofluorobenzene (...	10.271	95	109469	9.79	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 97.90%			
Target Compounds						Qvalue
12) Acetone	3.257	43	1835	0.84	ppb	# 100
17) Methylene Chloride	3.672	49	8616	0.69	ppb	85

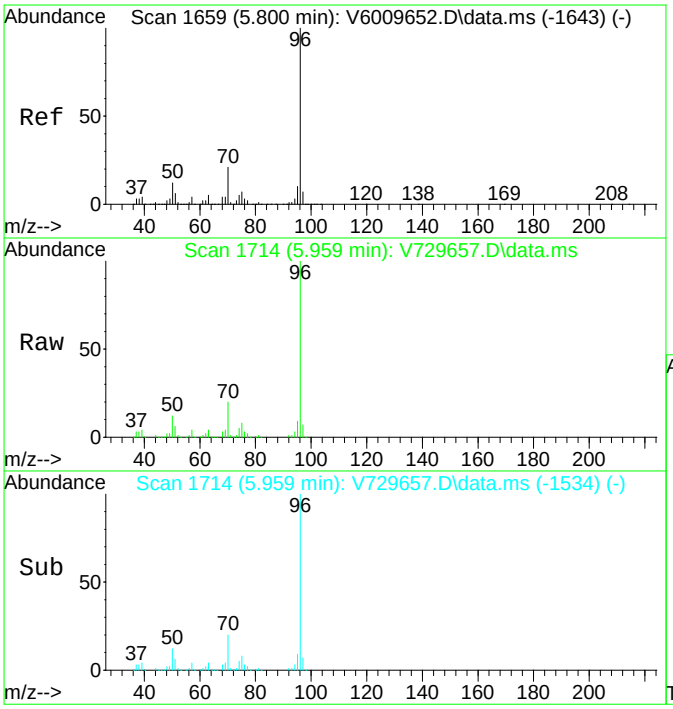
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729657.D
Acq On : 1 Nov 2018 1:23 pm
InstName : MSVOA7
Operator : SS
Sample : 18J1263-10
Misc : QBV7110118A 8260 M A
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 01 14:27:05 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

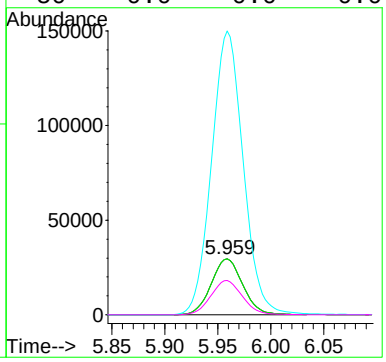


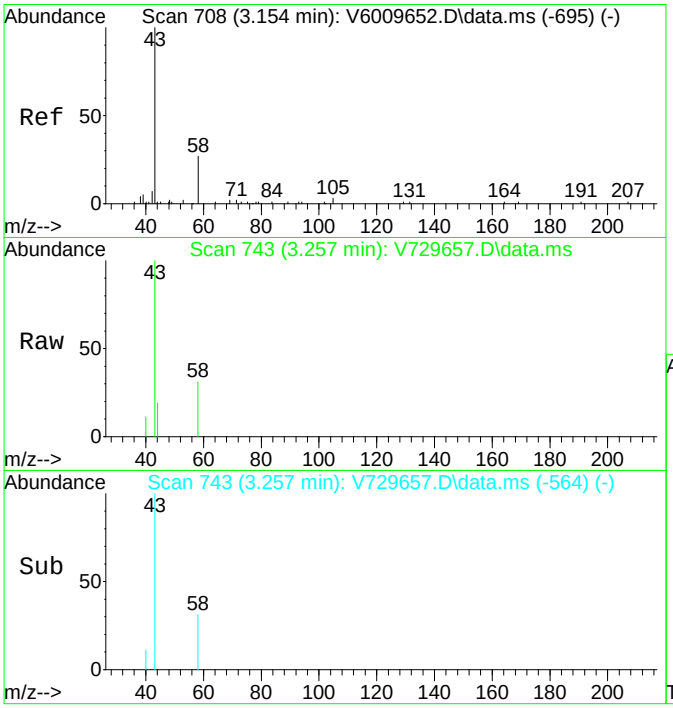


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729657.D
Acq: 1 Nov 2018 1:23 pm

Tgt Ion: 70 Resp: 61750

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	505.5	323.6	672.2
50	0.0	0.0	0.0

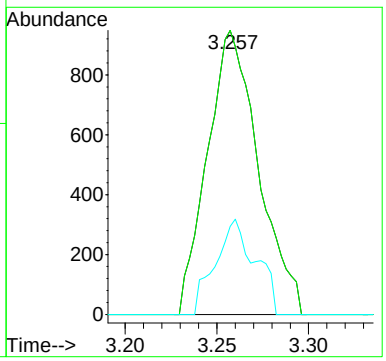


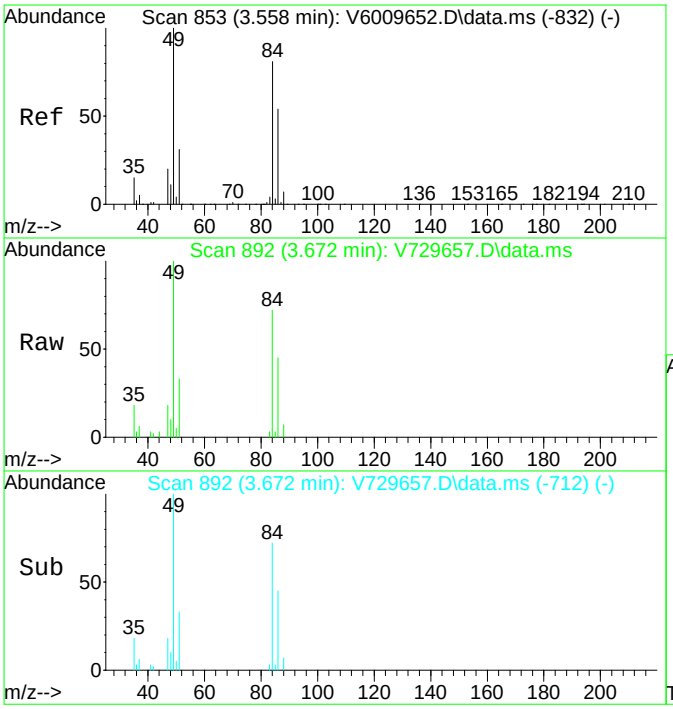


#12
Acetone
Concen: 0.84 ppb
RT: 3.257 min Scan# 743
Delta R.T. -0.003 min
Lab File: V729657.D
Acq: 1 Nov 2018 1:23 pm

Tgt Ion: 43 Resp: 1835

Ion	Ratio	Lower	Upper
43	100		
43	100.0	80.0	120.0
58	26.3	0.0	0.0#

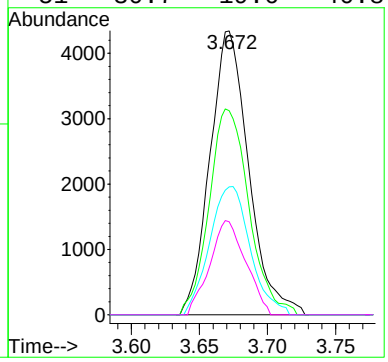


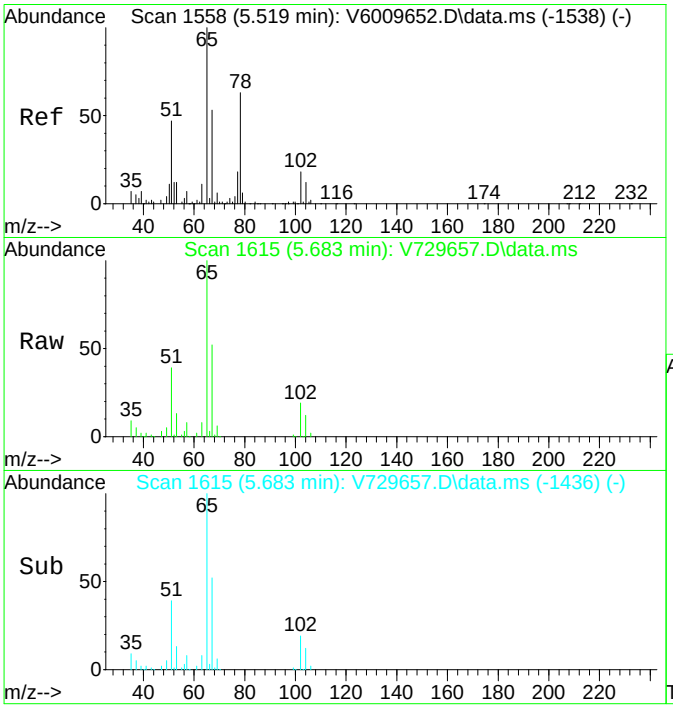


#17
Methylene Chloride
Concen: 0.69 ppb
RT: 3.672 min Scan# 892
Delta R.T. -0.000 min
Lab File: V729657.D
Acq: 1 Nov 2018 1:23 pm

Tgt Ion: 49 Resp: 8616

Ion	Ratio	Lower	Upper
49	100		
84	74.4	38.0	78.8
86	47.3	24.0	49.8
51	30.7	19.6	40.8

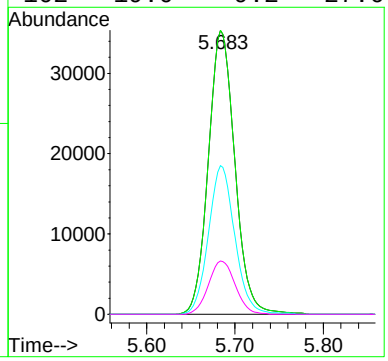


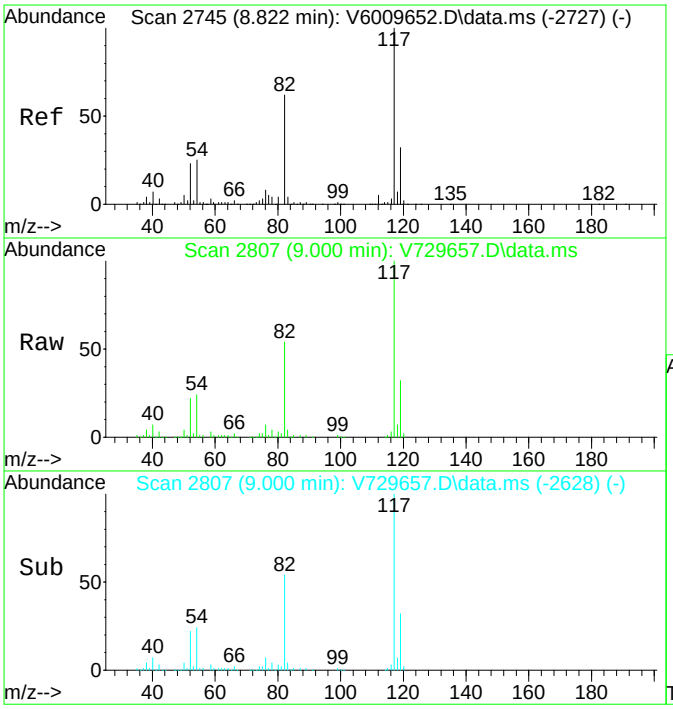


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.95 ppb
RT: 5.683 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729657.D
Acq: 1 Nov 2018 1:23 pm

Tgt Ion: 65 Resp: 73897

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.9	33.0	68.6
102	19.0	9.2	27.6

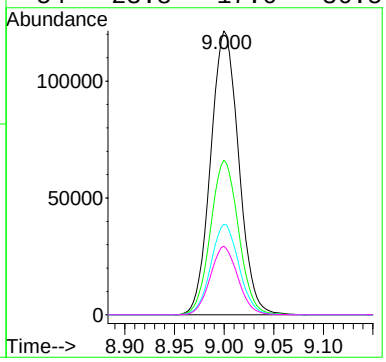


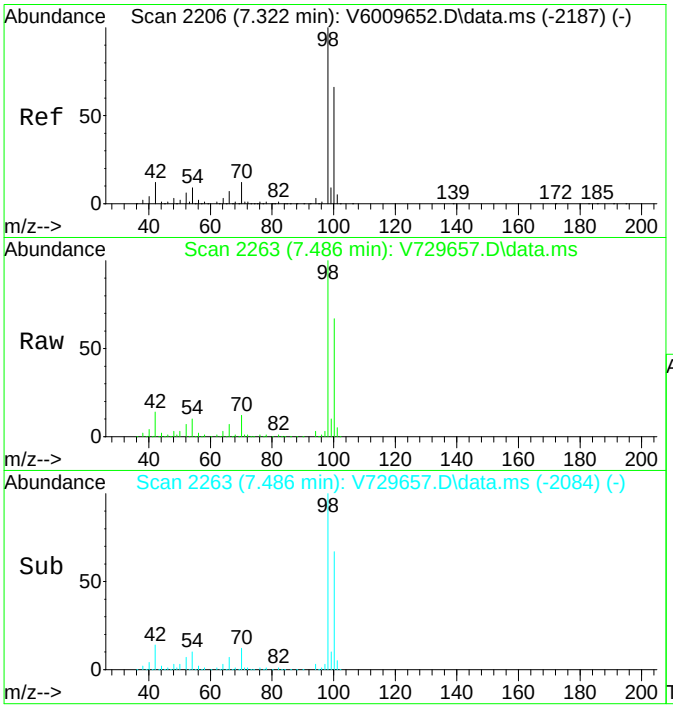


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729657.D
Acq: 1 Nov 2018 1:23 pm

Tgt Ion:117 Resp: 239741

Ion	Ratio	Lower	Upper
117	100		
82	54.5	35.9	74.7
119	32.0	20.8	43.2
54	23.8	17.6	36.5

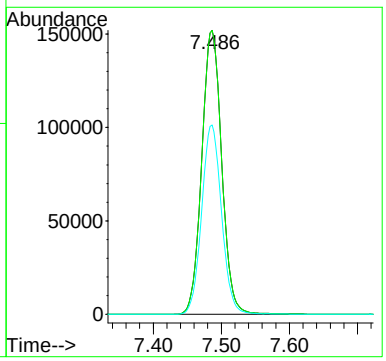


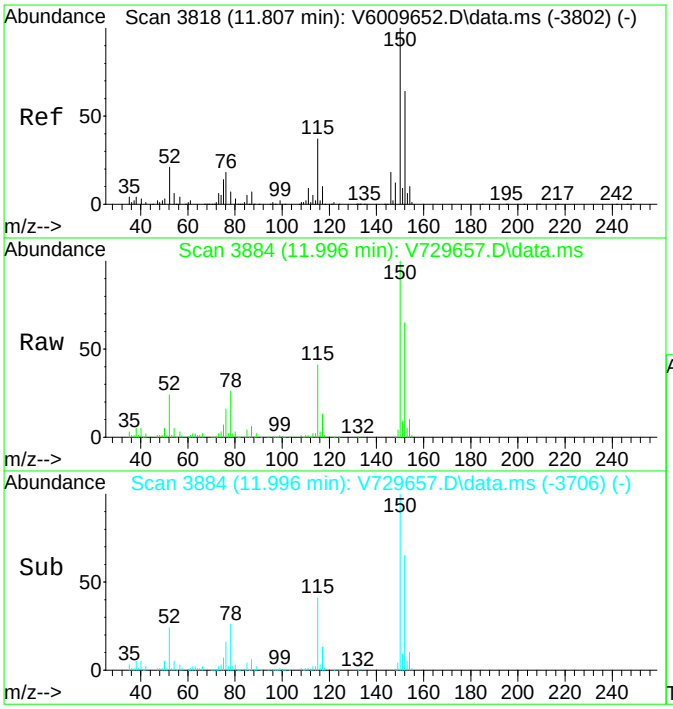


#51
Toluene-d8 (SURR)
Concen: 9.44 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729657.D
Acq: 1 Nov 2018 1:23 pm

Tgt Ion: 98 Resp: 309434

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	66.2	43.4	90.2

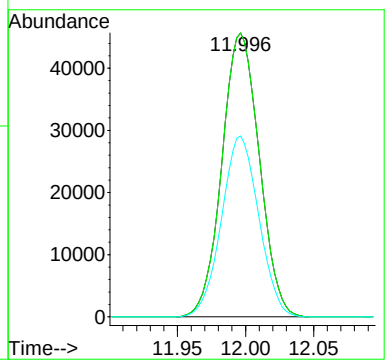


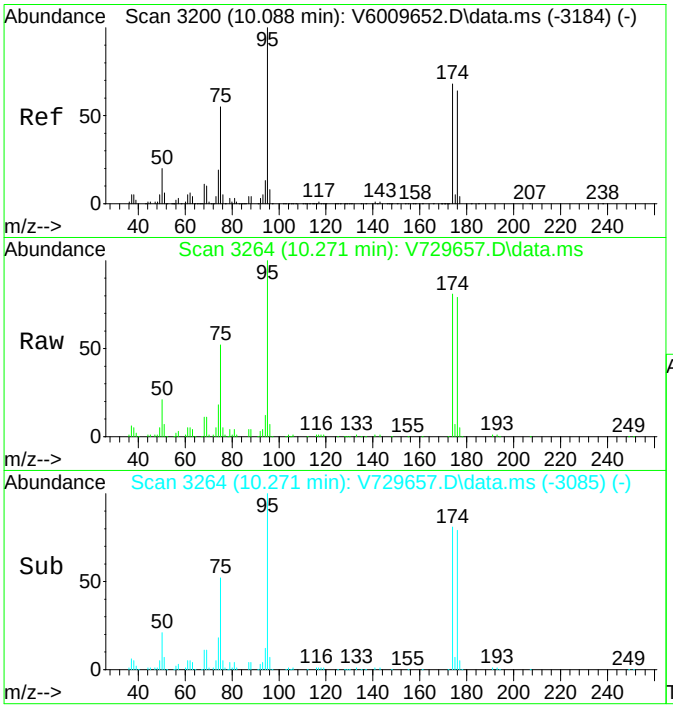


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729657.D
Acq: 1 Nov 2018 1:23 pm

Tgt Ion:152 Resp: 87245

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	63.5	33.7	101.0

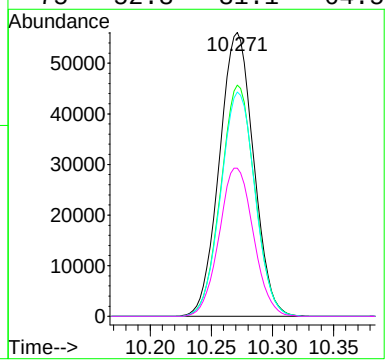




#70
p-Bromofluorobenzene (SURR)
Concen: 9.79 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729657.D
Acq: 1 Nov 2018 1:23 pm

Tgt Ion: 95 Resp: 109469

Ion	Ratio	Lower	Upper
95	100		
174	80.9	49.1	102.1
176	79.2	47.7	99.1
75	52.3	31.1	64.5



FORM VI

INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Calibration: YI80021
Instrument: MSVOA7
Calibration Date: 09/19/18 10:05

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,1,2-Tetrachloroethane	0.5	0.4059931	2	0.3906318	4	0.3875623	10	0.346877	20	0.3672584	40	0.3731148
1,1,1-Trichloroethane	0.5	2.418983	2	2.260479	4	2.255024	10	1.863067	20	2.05255	40	2.074565
1,1,2,2-Tetrachloroethane	0.5	0.9130399	2	0.8334228	4	0.8397254	10	0.7795523	20	0.7848618	40	0.7783156
1,1,2-Trichloro-1,2,2-trifluoroethan	0.5	1.35947	2	1.409898	4	1.298676	10	1.08698	20	1.200888	40	1.159794
1,1,2-Trichloroethane	0.5	0.3215052	2	0.2692632	4	0.2708102	10	0.2422062	20	0.2517648	40	0.2523939
1,1-Dichloroethane	0.5	2.918332	2	2.704699	4	2.672962	10	2.186445	20	2.445852	40	2.447386
1,1-Dichloroethylene	0.5	2.399001	2	2.266717	4	2.208214	10	1.805272	20	2.012706	40	2.021736
1,1-Dichloropropylene	0.5	2.181798	2	2.048078	4	2.004695	10	1.68418	20	1.884497	40	1.895446
1,2,3-Trichlorobenzene	0.5	0.7342206	2	0.7048451	4	0.6836884	10	0.61616	20	0.6764	40	0.6607953
1,2,3-Trichloropropane	0.5	0.2875806	2	0.2450199	4	0.2400095	10	0.2219503	20	0.2261867	40	0.2257866
1,2,4,5-Tetramethylbenzene	0.5	3.500286	2	3.629936	4	3.357054	10	3.146581	20	3.343048	40	3.189255
1,2,4-Trichlorobenzene	0.5	1.051523	2	0.9997276	4	0.9901368	10	0.9143129	20	0.9549844	40	0.9506605
1,2,4-Trimethylbenzene	0.5	4.283335	2	4.022438	4	3.951021	10	3.665196	20	3.761033	40	3.695429
1,2-Dibromo-3-chloropropane	0.5	0.169021	2	0.1360075	4	0.131995	10	0.1182614	20	0.1224654	40	0.1186458
1,2-Dibromoethane	0.5	0.2937186	2	0.2701179	4	0.2652334	10	0.239396	20	0.2499716	40	0.2520586
1,2-Dichlorobenzene	0.5	1.952152	2	1.896428	4	1.864067	10	1.712046	20	1.789388	40	1.792262
1,2-Dichloroethane	0.5	1.708297	2	1.646273	4	1.619018	10	1.347415	20	1.489242	40	1.505487
1,2-Dichloropropane	0.5	0.4311673	2	0.4088356	4	0.4066762	10	0.364219	20	0.382007	40	0.3857151
1,3,5-Trimethylbenzene	0.5	4.424594	2	4.113825	4	4.030641	10	3.731438	20	3.877466	40	3.776785
1,3-Dichlorobenzene	0.5	2.267821	2	2.177772	4	2.133806	10	1.984364	20	2.058725	40	2.04592
1,3-Dichloropropane	0.5	0.4976058	2	0.4739584	4	0.4760409	10	0.4252998	20	0.4488583	40	0.4539465
1,4-Dichlorobenzene	0.5	2.306361	2	2.192218	4	2.133313	10	1.978071	20	2.042833	40	2.046278
1,4-Dioxane	10		40		80	3.08071E-04	200	2.508732E-04	400	5.142141E-04	800	2.335428E-04
2,2-Dichloropropane	0.5	2.477845	2	2.261889	4	2.108347	10	1.887377	20	1.857594	40	1.832651
2-Butanone	0.5	0.1090356	2	0.1079905	4	0.112036	10	0.1023975	20	0.1098779	40	9.618693E-02
2-Chlorotoluene	0.5	4.132604	2	3.932496	4	3.813996	10	3.576281	20	3.723117	40	3.639949
2-Hexanone	0.5	0.2545324	2	0.2448665	4	0.2342839	10	0.2221948	20	0.2344129	40	0.2203097
4-Chlorotoluene	0.5	3.749326	2	3.555431	4	3.499109	10	3.269417	20	3.380345	40	3.324667
4-Methyl-2-pentanone	0.5	0.3748223	2	0.3427531	4	0.3192395	10	0.2886118	20	0.3010081	40	0.2979329
Acetone	0.5	0.6242398	2	0.3617222	4	0.3317541	10	0.33439	20	0.3752825	40	0.3042232
Acrolein	0.5		2	0.1331034	4	0.1265847	10	9.634862E-02	20	9.028481E-02	40	8.341888E-02

FORM VI

INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Calibration: YI80021
Instrument: MSVOA7
Calibration Date: 09/19/18 10:05

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Acrylonitrile	0.5	0.397046	2	0.3332466	4	0.2949496	10	0.25134	20	0.2766793	40	0.2615775
Benzene	0.5	6.10013	2	5.734292	4	5.648905	10	4.680101	20	5.169256	40	5.18073
Bromobenzene	0.5	1.922267	2	1.858701	4	1.801509	10	1.652848	20	1.709281	40	1.69333
Bromochloromethane	0.5	1.357081	2	1.237905	4	1.222714	10	1.002587	20	1.109065	40	1.108449
Bromodichloromethane	0.5	0.5182676	2	0.4912625	4	0.4943003	10	0.4493858	20	0.472206	40	0.4768384
Bromoform	0.5	0.2094089	2	0.2056249	4	0.1989944	10	0.1838719	20	0.192589	40	0.1964572
Bromomethane	0.5	1.096221	2	0.9516293	4	0.9013716	10	0.7024504	20	0.8000127	40	0.834493
Carbon disulfide	0.5	4.476108	2	4.113349	4	3.989351	10	3.246722	20	3.630138	40	3.608009
Carbon tetrachloride	0.5	2.12033	2	2.042057	4	1.999394	10	1.654572	20	1.862722	40	1.872144
Chlorobenzene	0.5	1.138835	2	1.08644	4	1.064052	10	0.9530127	20	0.9983051	40	0.9956408
Chloroethane	0.5	1.003258	2	0.9239673	4	0.9453963	10	0.7213564	20	0.8375039	40	0.8475129
Chloroform	0.5	2.602302	2	2.454764	4	2.424687	10	1.98543	20	2.23837	40	2.244729
Chloromethane	0.5	2.058427	2	1.803729	4	1.773916	10	1.357393	20	1.614982	40	1.615861
cis-1,2-Dichloroethylene	0.5	2.703953	2	2.467999	4	2.42128	10	1.995505	20	2.189692	40	2.209617
cis-1,3-Dichloropropylene	0.5	0.6531632	2	0.6168447	4	0.6166217	10	0.5596744	20	0.5772422	40	0.5775495
Cyclohexane	0.5	2.746308	2	2.864922	4	2.617255	10	2.229379	20	2.49681	40	2.41684
Dibromochloromethane	0.5	0.3755347	2	0.3467867	4	0.3349129	10	0.3059245	20	0.3188446	40	0.3245701
Dibromomethane	0.5	0.2089932	2	0.1928792	4	0.1887478	10	0.1704769	20	0.1774236	40	0.1791414
Dichlorodifluoromethane	0.5	1.263032	2	1.242786	4	1.178581	10	0.9022827	20	1.106118	40	1.095194
Diisopropyl ether (DIPE)	0.5	5.911164	2	5.286275	4	5.420507	10	4.425158	20	4.96398	40	4.859948
Ethyl Benzene	0.5	2.037031	2	1.910139	4	1.872644	10	1.685655	20	1.775615	40	1.758003
Ethyl tert-butyl ether (ETBE)	0.5	5.286924	2	4.710199	4	4.817925	10	3.928836	20	4.419582	40	4.349934
Hexachlorobutadiene	0.5	0.4980812	2	0.4552847	4	0.4269665	10	0.4077185	20	0.4208872	40	0.4136869
Iodomethane	0.5	1.73523	2	1.727903	4	1.755365	10	1.478953	20	1.787384	40	1.790414
Isopropylbenzene	0.5	5.471544	2	5.071368	4	4.951464	10	4.568053	20	4.704151	40	4.596156
Methyl acetate	0.5	0.766073	2	0.774104	4	0.7122653	10	0.5970506	20	0.6864139	40	0.6440344
Methyl Methacrylate	0.5	0.2271614	2	0.2030458	4	0.2002836	10	0.1845332	20	0.194	40	0.1933954
Methyl tert-butyl ether (MTBE)	0.5	3.870113	2	3.586034	4	3.495911	10	2.885664	20	3.187076	40	3.197906
Methylcyclohexane	0.5	0.6445542	2	0.6860311	4	0.6326849	10	0.5845864	20	0.611057	40	0.5902025
Methylene chloride	0.5	3.122068	2	2.209603	4	2.075194	10	1.639295	20	1.801113	40	1.775051
Naphthalene	0.5	1.933861	2	1.808673	4	1.759974	10	1.609309	20	1.742446	40	1.707464

FORM VI

INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Calibration: YI80021
Instrument: MSVOA7
Calibration Date: 09/19/18 10:05

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
n-Butylbenzene	0.5	4.52715	2	3.830954	4	4.07622	10	3.850719	20	3.730342	40	3.691253
n-Propylbenzene	0.5	6.221279	2	5.827438	4	5.713335	10	5.337943	20	5.470387	40	5.318714
o-Xylene	0.5	1.568577	2	1.476097	4	1.449305	10	1.302092	20	1.371557	40	1.360286
p- & m- Xylenes	1	1.573743	4	1.474365	8	1.457033	20	1.318925	40	1.386438	80	1.36845
p-Diethylbenzene	0.5	2.276313	2	2.173314	4	2.030555	10	1.902619	20	1.980304	40	1.92631
p-Ethyltoluene	0.5	5.056912	2	5.097703	4	4.678995	10	4.393176	20	4.601156	40	4.382909
p-Isopropyltoluene	0.5	4.537438	2	4.189568	4	4.088682	10	3.839888	20	3.915455	40	3.83837
sec-Butylbenzene	0.5	4.905854	2	4.548141	4	4.481259	10	4.166085	20	4.229084	40	4.108857
Styrene	0.5	1.209667	2	1.182392	4	1.173496	10	1.060411	20	1.115499	40	1.117189
SURR: 1,2-Dichloroethane-d4	10	1.145363	10	1.104595	10	1.094853	10	1.009546	10	1.085405	10	1.105395
SURR: p-Bromofluorobenzene	10	1.302254	10	1.307596	10	1.282862	10	1.300742	10	1.307903	10	1.284252
SURR: Toluene-d8	10	1.357462	10	1.345305	10	1.348452	10	1.423074	10	1.36572	10	1.367514
tert-Amyl alcohol (TAA)	5	0.1069288	20	9.124143E-02	40	9.036161E-02	100	7.064683E-02	200	9.637117E-02	400	7.570625E-02
tert-Amyl methyl ether (TAME)	0.5	4.809731	2	4.288109	4	4.358694	10	3.603188	20	4.161366	40	4.00413
tert-Butyl alcohol (TBA)	2.5	0.0824066	10	7.600017E-02	20	7.363599E-02	50	5.548501E-02	80	7.630352E-02	120	5.645381E-02
tert-Butylbenzene	0.5	3.660162	2	3.405141	4	3.366354	10	3.088105	20	3.182398	40	3.088044
Tetrachloroethylene	0.5	0.5130428	2	0.5437746	4	0.5743238	10	0.3957528	20	0.5862525	40	0.641993
Tetrahydrofuran	0.5		2	0.1120043	4	0.1096022	10	8.932845E-02	20	9.906101E-02	40	9.187388E-02
Toluene	0.5	1.845018	2	1.705024	4	1.697614	10	1.514886	20	1.582809	40	1.571299
trans-1,2-Dichloroethylene	0.5	2.37424	2	2.185629	4	2.142448	10	1.765756	20	1.973764	40	1.977727
trans-1,3-Dichloropropylene	0.5	0.6474041	2	0.5448542	4	0.5395815	10	0.4884524	20	0.4974023	40	0.5016232
trans-1,4-dichloro-2-butene	0.5	1.051196	2	1.010253	4	0.9744921	10	0.9184042	20	0.9456334	40	0.9436057
Trichloroethylene	0.5	0.5001588	2	0.4380606	4	0.4297703	10	0.3726364	20	0.4016769	40	0.4050834
Trichlorofluoromethane	0.5	2.0947	2	1.97914	4	1.89877	10	1.537684	20	1.770075	40	1.768015
Vinyl acetate	0.5	3.318636	2	2.62513	4	2.841381	10	2.419701	20	2.441367	40	2.303206
Vinyl Chloride	0.5	1.771503	2	1.609878	4	1.595275	10	1.24424	20	1.462246	40	1.461684

FORM VI INITIAL CALIBRATION DATA (Continued)

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Calibration: YI80021 Instrument: MSVOA7

Calibration Date: 09/19/18 10:05

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,1,2-Tetrachloroethane	80	0.3942358	120	0.3806132	160	0.3685655						
1,1,1-Trichloroethane	80	2.063702	120	2.060115	160	1.983544						
1,1,2,2-Tetrachloroethane	80	0.8226049	120	0.8177013	160	0.8232408						
1,1,2-Trichloro-1,2,2-trifluoroethan	80	0.9815984	120	0.9965035	160	0.8734553						
1,1,2-Trichloroethane	80	0.2719708	120	0.271857	160	0.2710144						
1,1-Dichloroethane	80	2.551953	120	2.513756	160	2.473999						
1,1-Dichloroethylene	80	1.976386	120	1.99233	160	1.900683						
1,1-Dichloropropylene	80	1.867141	120	1.868656	160	1.775795						
1,2,3-Trichlorobenzene	80	0.6898751	120	0.668963	160	0.6434552						
1,2,3-Trichloropropane	80	0.2333268	120	0.2278079	160	0.2231195						
1,2,4,5-Tetramethylbenzene	80	3.287433	120	3.155521	160	3.050465						
1,2,4-Trichlorobenzene	80	0.9932502	120	0.9696797	160	0.9480362						
1,2,4-Trimethylbenzene	80	3.745766	120	3.582612	160	3.449941						
1,2-Dibromo-3-chloropropane	80	0.1269839	120	0.1290883	160	0.1279101						
1,2-Dibromoethane	80	0.2726811	120	0.2719259	160	0.2739585						
1,2-Dichlorobenzene	80	1.855857	120	1.804232	160	1.760446						
1,2-Dichloroethane	80	1.58044	120	1.537792	160	1.513041						
1,2-Dichloropropane	80	0.4144705	120	0.4145955	160	0.4132708						
1,3,5-Trimethylbenzene	80	3.726214	120	3.538193	160	3.354075						
1,3-Dichlorobenzene	80	2.093935	120	2.000293	160	1.91316						
1,3-Dichloropropane	80	0.4860668	120	0.4822371	160	0.4815982						
1,4-Dichlorobenzene	80	2.104299	120	2.014354	160	1.932516						
1,4-Dioxane	1600	3.727829E-04	2400	5.553131E-04	3200	3.920285E-04						
2,2-Dichloropropane	80	1.856624	120	1.842614	160	1.78051						
2-Butanone	80	0.1021801	120	0.1047724	160	0.0996834						
2-Chlorotoluene	80	3.646411	120	3.470694	160	3.3248						
2-Hexanone	80	0.2310469	120	0.2343542	160	0.2255871						
4-Chlorotoluene	80	3.357629	120	3.204807	160	3.057832						
4-Methyl-2-pentanone	80	0.3210075	120	0.3212508	160	0.3182373						
Acetone	80	0.2741221	120	0.3056669	160	0.2548429						
Acrolein	80	8.918339E-02	120	9.064804E-02	160	9.324187E-02						

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Calibration: YI80021 Instrument: MSVOA7

Calibration Date: 09/19/18 10:05

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Acrylonitrile	80	3.470096E-02	120	0.2869014	160	0.2869786						
Benzene	80	5.339136	120	5.191323	160	5.071809						
Bromobenzene	80	1.75006	120	1.720578	160	1.694271						
Bromochloromethane	80	1.100657	120	1.058147	160	1.049953						
Bromodichloromethane	80	0.5154708	120	0.514058	160	0.512966						
Bromoform	80	0.212985	120	0.2119926	160	0.2112163						
Bromomethane	80	0.9047362	120	0.8954248	160	0.8937904						
Carbon disulfide	80	3.626401	120	3.623395	160	3.523887						
Carbon tetrachloride	80	1.797353	120	1.792607	160	1.673364						
Chlorobenzene	80	1.053224	120	1.030095	160	1.01455						
Chloroethane	80	0.8568914	120	0.8462195	160	0.8471828						
Chloroform	80	2.360958	120	2.336883	160	2.302712						
Chloromethane	80	1.672925	120	1.701899	160	1.744006						
cis-1,2-Dichloroethylene	80	2.32225	120	2.292276	160	2.276467						
cis-1,3-Dichloropropylene	80	0.6212775	120	0.6163695	160	0.6160393						
Cyclohexane	80	2.058303	120	2.061501	160	1.790555						
Dibromochloromethane	80	0.3524123	120	0.3511405	160	0.3518625						
Dibromomethane	80	0.195001	120	0.1963023	160	0.1973965						
Dichlorodifluoromethane	80	0.9357877	120	0.9311221	160	0.8523667						
Diisopropyl ether (DIPE)	80	4.810228	120	4.899705	160	4.823635						
Ethyl Benzene	80	1.821164	120	1.742658	160	1.666965						
Ethyl tert-butyl ether (ETBE)	80	4.512876	120	4.443077	160	4.414625						
Hexachlorobutadiene	80	0.4007765	120	0.3884664	160	0.3532488						
Iodomethane	80	1.7591	120	1.609761	160	1.507654						
Isopropylbenzene	80	4.500234	120	4.309583	160	4.039364						
Methyl acetate	80	0.6908697	120	0.6931088	160	0.6869594						
Methyl Methacrylate	80	0.211343	120	0.2121265	160	0.2134867						
Methyl tert-butyl ether (MTBE)	80	3.361403	120	3.327476	160	3.337761						
Methylcyclohexane	80	0.4965125	120	0.5034469	160	0.4296912						
Methylene chloride	80	1.861293	120	1.837449	160	1.830869						
Naphthalene	80	1.78961	120	1.763036	160	1.723674						

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Calibration: YI80021 Instrument: MSVOA7

Calibration Date: 09/19/18 10:05

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
n-Butylbenzene	80	3.493459	120	3.239633	160	2.959455						
n-Propylbenzene	80	5.163223	120	4.896936	160	4.579152						
o-Xylene	80	1.43225	120	1.369654	160	1.31802						
p- & m- Xylenes	160	1.385683	240	1.289415	320	1.200145						
p-Diethylbenzene	80	1.925972	120	1.861531	160	1.757139						
p-Ethyltoluene	80	4.256154	120	4.020626	160	3.799939						
p-Isopropyltoluene	80	3.759086	120	3.602762	160	3.347707						
sec-Butylbenzene	80	3.907526	120	3.768868	160	3.476136						
Styrene	80	1.174738	120	1.111407	160	1.061887						
SURR: 1,2-Dichloroethane-d4	10	1.089634	10	1.09367	10	1.10712						
SURR: p-Bromofluorobenzene	10	1.248229	10	1.248987	10	1.249364						
SURR: Toluene-d8	10	1.357872	10	1.36209	10	1.381918						
tert-Amyl alcohol (TAA)	800	9.021497E-02	1200	9.907704E-02	1600	8.906934E-02						
tert-Amyl methyl ether (TAME)	80	4.282204	120	4.238751	160	4.137745						
tert-Butyl alcohol (TBA)	240	0.0697216	360	8.135346E-02	480	7.043228E-02						
tert-Butylbenzene	80	3.0052	120	2.908984	160	2.73423						
Tetrachloroethylene	80	0.6088248	120	0.6082943	160	0.4867517						
Tetrahydrofuran	80	9.946215E-02	120	0.1022651	160	0.1017728						
Toluene	80	1.632601	120	1.590984	160	1.538168						
trans-1,2-Dichloroethylene	80	2.054161	120	2.047259	160	2.01666						
trans-1,3-Dichloropropylene	80	0.5379298	120	0.5329397	160	0.5307802						
trans-1,4-dichloro-2-butene	80	0.9815911	120	0.9678609	160	0.9466113						
Trichloroethylene	80	0.4251908	120	0.4294321	160	0.4160464						
Trichlorofluoromethane	80	1.560318	120	1.545551	160	1.41487						
Vinyl acetate	80	2.54877	120	2.364157	160	2.541437						
Vinyl Chloride	80	1.432637	120	1.450319	160	1.391937						

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Calibration: YI80021 Instrument: MSVOA7

Calibration Date: 09/19/18 10:05

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,1,2-Tetrachloroethane	0.379428	4.643685	9.125333	2.898895E-02			20	
1,1,1-Trichloroethane	2.11467	7.932407	5.334667	0.0337677			SPCC (0.1)	
1,1,2,2-Tetrachloroethane	0.821385	5.063667	10.47533	1.680363E-02			SPCC (0.3)	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113	1.151918	15.90547	3.106333	4.465546E-02			SPCC (0.1)	
1,1,2-Trichloroethane	0.2691984	8.380358	8.025	2.911356E-02			SPCC (0.1)	
1,1-Dichloroethane	2.546154	8.03973	4.333333	3.533445E-02			SPCC (0.2)	
1,1-Dichloroethylene	2.064783	9.140474	3.140667	0.0463049			SPCC (0.1)	
1,1-Dichloropropylene	1.912254	7.740514	5.486	3.071256E-02			20	
1,2,3-Trichlorobenzene	0.6753781	5.072896	14.42	6.713784E-03			20	
1,2,3-Trichloropropane	0.2367542	8.696102	10.52478	3.007977E-02			20	
1,2,4,5-Tetramethylbenzene	3.295509	5.605503	12.79689	1.822398E-02			20	
1,2,4-Trichlorobenzene	0.9747013	4.048933	13.84389	1.090512E-02			SPCC (0.2)	
1,2,4-Trimethylbenzene	3.795197	6.646663	11.12467	2.467363E-02			20	
1,2-Dibromo-3-chloropropane	0.1311532	11.71485	12.94644	1.731334E-02			SPCC (0.05)	
1,2-Dibromoethane	0.2654513	6.082098	8.562333	2.593391E-02			SPCC (0.1)	
1,2-Dichlorobenzene	1.825209	4.037492	12.02267	2.285961E-02			SPCC (0.4)	
1,2-Dichloroethane	1.549667	6.77734	5.759889	2.151452E-02			SPCC (0.1)	
1,2-Dichloropropane	0.4023286	5.162975	6.555333	2.260682E-02			SPCC (0.1)	
1,3,5-Trimethylbenzene	3.84147	8.285273	10.698	2.081647E-02			20	
1,3-Dichlorobenzene	2.075088	5.186297	11.48733	3.165543E-02			SPCC (0.6)	
1,3-Dichloropropane	0.4695124	4.796536	8.195667	1.516398E-02			20	
1,4-Dichlorobenzene	2.08336	5.528572	11.58933	2.040625E-02			SPCC (0.5)	
1,4-Dioxane	3.752608E-04	33.01303	6.697286	2.403634E-02			20	*
2,2-Dichloropropane	1.989495	12.08088	4.863111	2.603687E-02			20	
2-Butanone	0.1049067	4.989264	4.919556	7.371333E-02			SPCC (0.1)	
2-Chlorotoluene	3.695594	6.556606	10.63967	0.0218933			20	
2-Hexanone	0.2335098	4.652352	8.237334	6.076344E-03			SPCC (0.1)	
4-Chlorotoluene	3.377618	6.027608	10.76322	2.260669E-02			20	
4-Methyl-2-pentanone	0.3205404	8.074995	7.390556	2.710945E-02			SPCC (0.1)	
Acetone	0.3518049	31.04115	3.258	4.225575E-02			SPCC (0.1)	
Acrolein	0.1003517	18.58317	3.097125	4.854347E-02			20	
Acrylonitrile	0.2692689	36.47287	3.948111	0.6673185			20	*

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Calibration: YI80021 Instrument: MSVOA7

Calibration Date: 09/19/18 10:05

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Benzene	5.346187	7.859302	5.698	3.137453E-02			SPCC (0.5)	
Bromobenzene	1.755872	5.018297	10.44833	1.981198E-02			20	
Bromochloromethane	1.138506	9.855575	5.138667	2.397116E-02			20	
Bromodichloromethane	0.4938617	4.844473	6.837333	6.153749E-03			SPCC (0.2)	
Bromoform	0.2025711	5.020687	9.970666	0.0168629			SPCC (0.1)	
Bromomethane	0.886681	12.15791	2.242	1.746232E-02			SPCC (0.1)	
Carbon disulfide	3.759707	9.799526	3.371	1.969193E-02			SPCC (0.1)	
Carbon tetrachloride	1.868283	8.576226	5.476445	2.687653E-02			SPCC (0.1)	
Chlorobenzene	1.037128	5.349271	9.035667	1.468767E-02			SPCC (0.5)	
Chloroethane	0.8699209	9.202458	2.347333	2.683343E-02			SPCC (0.1)	
Chloroform	2.327871	7.359215	5.202	1.830463E-02			SPCC (0.2)	
Chloromethane	1.704793	10.95131	1.762111	7.824945E-02			SPCC (0.1)	
cis-1,2-Dichloroethylene	2.319893	8.576683	4.895	3.309014E-02			SPCC (0.1)	
cis-1,3-Dichloropropylene	0.6060869	4.767303	7.256333	1.575366E-02			SPCC (0.2)	
Cyclohexane	2.364653	15.05266	5.347	2.789279E-02			SPCC (0.1)	
Dibromochloromethane	0.340221	6.235022	8.440555	1.699957E-02			SPCC (0.1)	
Dibromomethane	0.1895958	6.312177	6.699333	5.491659E-03			20	
Dichlorodifluoromethane	1.056363	14.66402	1.553778	8.805146E-02			SPCC (0.1)	
Diisopropyl ether (DIPE)	5.044511	8.582982	4.315556	3.138562E-02			20	
Ethyl Benzene	1.807764	6.484025	9.112667	2.521023E-02			SPCC (0.1)	
Ethyl tert-butyl ether (ETBE)	4.542664	8.214745	4.662333	1.623019E-02			20	
Hexachlorobutadiene	0.4183463	9.774484	13.98333	1.665399E-02			20	
Iodomethane	1.683529	7.151007	3.324	1.506815E-02			20	
Isopropylbenzene	4.690213	9.085059	10.05322	1.692365E-02			SPCC (0.1)	
Methyl acetate	0.6945421	7.878804	3.555	4.027804E-02			SPCC (0.1)	
Methyl Methacrylate	0.2043751	6.359141	6.617778	2.251657E-02			20	
Methyl tert-butyl ether (MTBE)	3.361038	8.23252	3.878556	2.868112E-02			SPCC (0.1)	
Methylcyclohexane	0.5754185	14.34523	6.434333	2.417862E-02			SPCC (0.1)	
Methylene chloride	2.016882	22.17762	3.672	6.155313E-03			SPCC (0.1)	
Naphthalene	1.759783	4.94482	14.14167	1.644277E-02			20	
n-Butylbenzene	3.711021	12.30619	11.93122	2.140644E-02			20	
n-Propylbenzene	5.392045	9.16368	10.50922	2.635502E-02			20	

FORM VI **INITIAL CALIBRATION DATA (Continued)**

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Calibration:	YI80021	Instrument:	MSVOA7
		Calibration Date:	09/19/18 10:05

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
o-Xylene	1.405315	6.008545	9.671111	2.677436E-02			SPCC (0.3)	
p- & m- Xylenes	1.3838	7.946496	9.232889	2.462863E-02			SPCC (0.1)	
p-Diethylbenzene	1.981562	8.042775	11.90122	2.037754E-02			20	
p-Ethyltoluene	4.476397	9.702626	10.632	0.0313706			20	
p-Isopropyltoluene	3.902106	8.815448	11.46333	2.451276E-02			20	
sec-Butylbenzene	4.176868	10.36492	11.30456	1.670037E-02			20	
Styrene	1.134076	4.731843	9.699333	0.0184166			SPCC (0.3)	
SURR: 1,2-Dichloroethane-d4	1.092842	3.277999	5.686667	1.464767E-02			20	
SURR: p-Bromofluorobenzene	1.281354	2.0248	10.27433	1.342168E-02			20	
SURR: Toluene-d8	1.367712	1.710239	7.489333	6.94203E-03			20	
tert-Amyl alcohol (TAA)	8.995749E-02	12.37237	5.723	3.224573E-02			20	
tert-Amyl methyl ether (TAME)	4.209324	7.569217	5.747667	2.197083E-02			20	
tert-Butyl alcohol (TBA)	7.131027E-02	13.58498	3.805445	0.0417918			20	
tert-Butylbenzene	3.159846	8.894605	11.06178	2.316412E-02			20	
Tetrachloroethylene	0.5510011	13.82398	8.101333	2.375435E-02			SPCC (0.2)	
Tetrahydrofuran	0.1006712	7.713185	5.1655	6.138784E-02			20	
Toluene	1.630934	6.331726	7.557222	2.620229E-02			SPCC (0.4)	
trans-1,2-Dichloroethylene	2.059738	8.127325	3.905	2.846288E-02			SPCC (0.1)	
trans-1,3-Dichloropropylene	0.535663	8.724809	7.824	2.413976E-02			SPCC (0.1)	
trans-1,4-dichloro-2-butene	0.971072	4.129048	10.52533	2.528015E-02			20	
Trichloroethylene	0.4242284	8.173832	6.306	2.412391E-02			SPCC (0.2)	
Trichlorofluoromethane	1.729903	13.33502	2.592333	6.797109E-02			SPCC (0.1)	
Vinyl acetate	2.600421	12.02895	4.361	3.741058E-02			20	
Vinyl Chloride	1.49108	10.09158	1.872	1.954815E-02			SPCC (0.1)	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728676.D
Acq On : 18 Sep 2018 9:45 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL1
Misc : QBV7091818A
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 18 15:12:46 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	92080	10.00	ppb	#	0.13
40) CHLOROBENZENE-d5 (ISTD)	9.003	117	336853	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	12.002	152	122470	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.686	65	105465	9.38	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery = 93.80%				
51) Toluene-d8 (SURR)	7.489	98	457265	10.51	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.10%				
70) p-Bromofluorobenzene (...	10.274	95	159487	10.09	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	5815	0.62	ppb	#	86
3) Chloromethane	1.763	50	9477	0.71	ppb		98
4) Vinyl Chloride	1.872	62	8156	0.75	ppb		99
5) Bromomethane	2.242	94	5047	1.67	ppb		97
6) Chloroethane	2.348	64	4619	0.73	ppb		95
7) Trichlorofluoromethane	2.592	101	9644	0.66	ppb		99
9) Freon-113	3.104	101	6259	0.52	ppb		98
10) 1,1-Dichloroethylene	3.140	61	11045	0.48	ppb		91
12) Acetone	3.260	43	2874	1.03	ppb	#	100
13) Iodomethane	3.324	142	7989	2.32	ppb		100
14) Methyl Acetate	3.552	43	3527	0.47	ppb		100
15) Carbon disulfide	3.371	76	20608	0.52	ppb		100
16) tert-Butyl Alcohol (TBA)	3.803	59	1897	1.99	ppb	#	100
17) Methylene Chloride	3.672	49	14374	0.65	ppb		89
18) Acrylonitrile	3.961	53	1828m	0.59	ppb		
19) trans-1,2-Dichloroethy...	3.903	61	10931	0.47	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.881	73	17818	0.49	ppb	#	90
21) 1,1-Dichloroethane	4.331	63	13436	0.46	ppb	#	97
22) Vinyl Acetate	4.362	43	15279m	0.37	ppb		
23) Diisopropyl ether (DIPE)	4.315	45	27215	0.45	ppb		99
24) Ethyl-tert-Butyl ether...	4.665	59	24341	0.47	ppb	#	85
25) cis-1,2-Dichloroethylene	4.896	61	12449	0.47	ppb		96
26) 2-Butanone	4.929	72	502	0.45	ppb	#	100
27) 2,2-Dichloropropane	4.860	77	11408	0.55	ppb	#	86
29) Bromochloromethane	5.138	49	6248	0.45	ppb		94
30) Chloroform	5.202	83	11981	0.47	ppb	#	99
31) 1,1,1-Trichloroethane	5.333	97	11137	0.48	ppb	#	67
32) Cyclohexane	5.344	56	12644	0.46	ppb		89
33) 1,1-Dichloropropylene	5.483	75	10045	0.50	ppb		97
35) Carbon Tetrachloride	5.478	117	9762	0.49	ppb		98
36) tert-Amyl alcohol (TAA)	5.725	59	4923	5.06	ppb	#	78
37) 1,2-Dichloroethane	5.759	62	7865	0.44	ppb	#	87
38) Benzene	5.697	78	28085	0.48	ppb	#	1
39) tert-Amyl methyl ether...	5.747	73	22144	0.56	ppb	#	98
41) Trichloroethylene	6.307	95	8424	0.58	ppb		96
42) Methyl Cyclohexane	6.435	83	10856	0.54	ppb		93
43) Methyl Methacrylate	6.616	69	3826	0.54	ppb	#	95
44) Dibromomethane	6.699	93	3520	0.51	ppb	#	64
45) Bromodichloromethane	6.835	83	8729	0.50	ppb		97
46) 1,2-Dichloropropane	6.554	63	7262	0.48	ppb		99
48) 2-Chloroethyl vinyl ether	7.094	63	3106	0.65	ppb		99
49) cis-1,3-Dichloropropene	7.255	75	11001	0.53	ppb		98
50) 4-Methyl-2-Pentanone	7.389	43	6313	0.55	ppb	#	85
52) Toluene	7.556	91	31075	0.53	ppb		100
53) trans-1,3-Dichloropropene	7.823	75	10904	0.62	ppb		97
54) 1,1,2-Trichloroethane	8.023	97	5415	0.57	ppb		88
55) 1,3-Dichloropropane	8.196	76	8381	0.51	ppb	#	99
56) Tetrachloroethylene	8.098	166	8641	0.53	ppb	#	100

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728676.D
Acq On : 18 Sep 2018 9:45 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL1
Misc : QBV7091818A
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 18 15:12:46 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

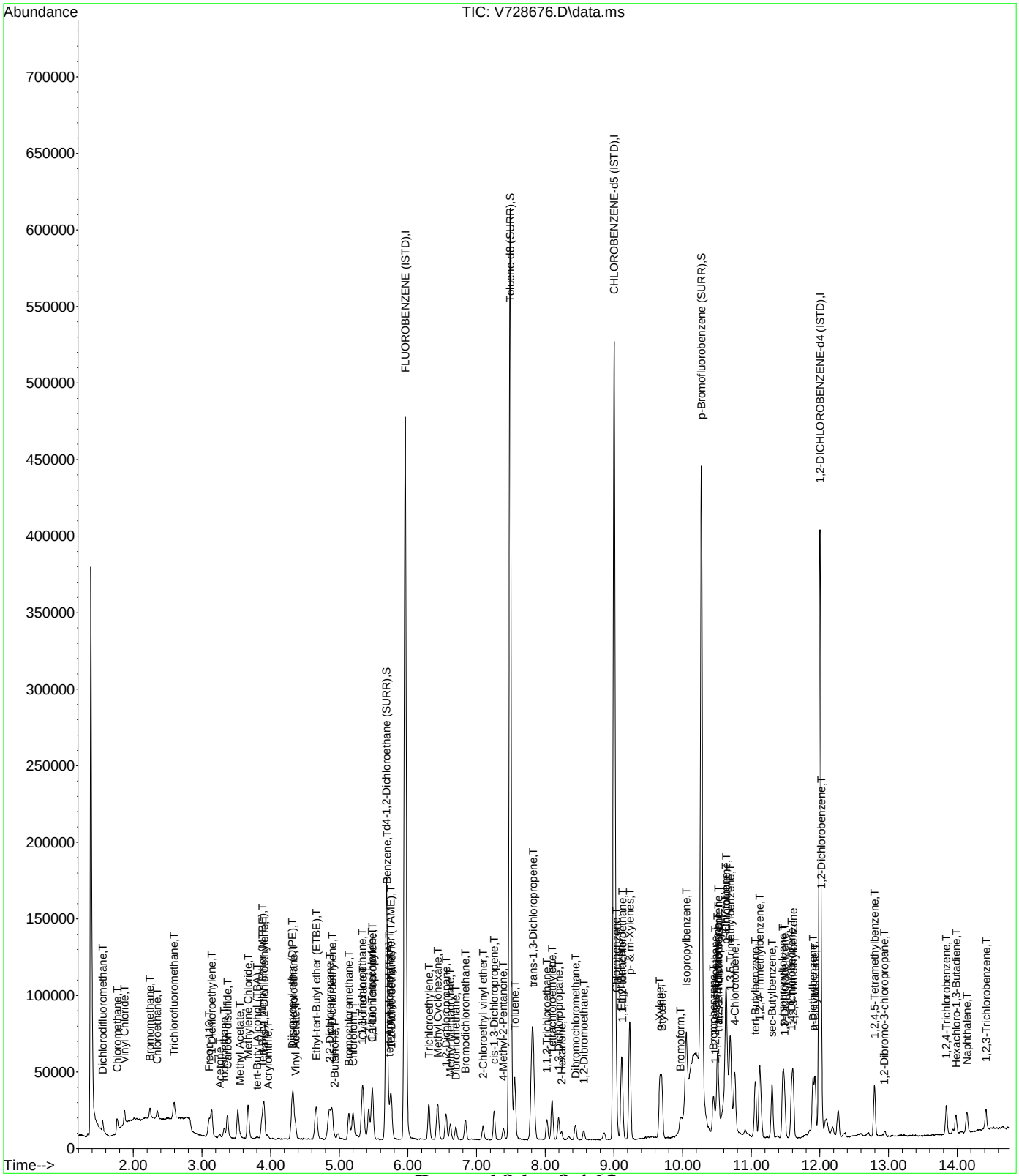
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
57) 2-Hexanone	8.238	43	4287	0.59	ppb	#	10
58) Dibromochloromethane	8.441	129	6325	0.58	ppb		97
59) 1,2-Dibromoethane	8.560	107	4947	0.58	ppb		98
60) Chlorobenzene	9.036	112	19181	0.54	ppb	#	64
61) 1,1,1,2-tetrachloroethane	9.122	131	6838	0.55	ppb	#	73
62) Ethyl Benzene	9.111	91	34309	0.55	ppb		98
63) p- & m-Xylenes	9.231	91	53012	0.93	ppb		97
64) o-Xylene	9.668	91	26419	0.55	ppb		99
65) Styrene	9.698	104	20374	0.56	ppb	#	100
66) Bromoform	9.968	173	3527	0.58	ppb	#	76
68) p-Ethyltoluene	10.630	105	30966	0.59	ppb	#	100
69) Isopropylbenzene	10.052	105	33505	0.59	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.474	83	5591	0.56	ppb	#	68
72) Bromobenzene	10.447	77	11771	0.57	ppb		95
73) trans-1,4-Dichloro-2-b...	10.525	75	6437	0.59	ppb		95
74) 1,2,3-Trichloropropane	10.522	110	1761	0.63	ppb		93
75) n-Propylbenzene	10.508	91	38096	0.57	ppb		98
76) 2-Chlorotoluene	10.636	91	25306	0.56	ppb		99
77) 4-Chlorotoluene	10.761	91	22959	0.56	ppb		98
78) 1,3,5-Trimethylbenzene	10.697	105	27094	0.60	ppb		98
79) tert-Butylbenzene	11.059	119	22413	0.61	ppb		98
80) 1,2,4-Trimethylbenzene	11.123	105	26229	0.59	ppb		99
81) sec-Butylbenzene	11.304	105	30041	0.61	ppb		99
82) 1,3-Dichlorobenzene	11.484	146	13887	0.58	ppb		100
83) p-Isopropyltoluene	11.459	119	27785	0.61	ppb		99
84) 1,4-Dichlorobenzene	11.590	146	14123	0.60	ppb		98
85) 1,2,3-Trimethylbenzene	11.610	105	24356	0.58	ppb		98
86) p-Diethylbenzene	11.899	105	13939	0.62	ppb		94
87) 1,2-Dichlorobenzene	12.021	146	11954	0.56	ppb	#	97
88) n-Butylbenzene	11.930	91	27722m	0.57	ppb		
89) 1,2-Dibromo-3-chloropr...	12.940	75	1035	0.74	ppb		94
90) 1,2,4,5-Tetramethylben...	12.795	119	21434	0.60	ppb		98
91) 1,2,4-Trichlorobenzene	13.841	180	6439	0.67	ppb		98
92) Hexachloro-1,3-Butadiene	13.983	225	3050	0.73	ppb		98
93) Naphthalene	14.141	128	11842	0.73	ppb		97
94) 1,2,3-Trichlorobenzene	14.420	180	4496	0.75	ppb		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728676.D
Acq On : 18 Sep 2018 9:45 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL1
Misc : QBV7091818A
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 18 15:12:46 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728677.D
Acq On : 18 Sep 2018 10:17 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL2
Misc : QBV7091818A
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 18 10:46:44 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.962	70	92184	10.00	ppb	#	0.13
40) CHLOROBENZENE-d5 (ISTD)	9.005	117	333447	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	12.002	152	121133	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.686	65	101826	9.05	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery = 90.50%				
51) Toluene-d8 (SURR)	7.489	98	448588	10.42	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.20%				
70) p-Bromofluorobenzene (...	10.274	95	158393	10.13	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.30%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	22913	2.44	ppb		100
3) Chloromethane	1.763	50	33255	2.49	ppb		99
4) Vinyl Chloride	1.872	62	29681	2.72	ppb		100
5) Bromomethane	2.242	94	17545	5.78	ppb		98
6) Chloroethane	2.347	64	17035	2.70	ppb		99
7) Trichlorofluoromethane	2.592	101	36489	2.50	ppb		100
8) Ethanol	2.887	45	1099	48.13	ppb	#	52
9) Freon-113	3.107	101	25994	2.17	ppb		97
10) 1,1-Dichloroethylene	3.140	61	41791	1.80	ppb		88
11) Acrolein	3.096	56	2454	1.95	ppb		87
12) Acetone	3.260	43	6669	2.38	ppb	#	100
13) Iodomethane	3.324	142	31857	9.26	ppb		100
14) Methyl Acetate	3.558	43	14272	1.89	ppb		99
15) Carbon disulfide	3.371	76	75837	1.92	ppb		100
16) tert-Butyl Alcohol (TBA)	3.808	59	7006	7.34	ppb	#	100
17) Methylene Chloride	3.672	49	40738	1.85	ppb		90
18) Acrylonitrile	3.958	53	6144m	1.96	ppb		
19) trans-1,2-Dichloroethy...	3.906	61	40296	1.73	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.880	73	66115	1.82	ppb		98
21) 1,1-Dichloroethane	4.334	63	49866	1.70	ppb	#	88
22) Vinyl Acetate	4.362	43	48399m	1.19	ppb		
23) Diisopropyl ether (DIPE)	4.317	45	97462	1.61	ppb		99
24) Ethyl-tert-Butyl ether...	4.662	59	86841	1.67	ppb	#	99
25) cis-1,2-Dichloroethylene	4.896	61	45502	1.71	ppb		97
26) 2-Butanone	4.918	72	1991	1.77	ppb	#	100
27) 2,2-Dichloropropane	4.865	77	41702	1.99	ppb	#	100
28) Tetrahydrofuran	5.171	71	2065	1.95	ppb	#	73
29) Bromochloromethane	5.138	49	22823	1.64	ppb		92
30) Chloroform	5.202	83	45258	1.78	ppb	#	100
31) 1,1,1-Trichloroethane	5.336	97	41676	1.79	ppb	#	67
32) Cyclohexane	5.347	56	52820	1.90	ppb		93
33) 1,1-Dichloropropylene	5.486	75	37760	1.88	ppb		98
35) Carbon Tetrachloride	5.475	117	37649	1.88	ppb		99
36) tert-Amyl alcohol (TAA)	5.725	59	16822	17.27	ppb	#	78
37) 1,2-Dichloroethane	5.758	62	30352	1.71	ppb		99
38) Benzene	5.697	78	105722	1.81	ppb	#	64
39) tert-Amyl methyl ether...	5.747	73	79059	2.00	ppb	#	99
41) Trichloroethylene	6.304	95	29214	2.03	ppb		95
42) Methyl Cyclohexane	6.435	83	45751	2.29	ppb		91
43) Methyl Methacrylate	6.618	69	13541	1.93	ppb	#	98
44) Dibromomethane	6.699	93	12863	1.87	ppb		95
45) Bromodichloromethane	6.838	83	32762	1.90	ppb		98
46) 1,2-Dichloropropane	6.557	63	27265	1.82	ppb	#	90
48) 2-Chloroethyl vinyl ether	7.094	63	12899	2.72	ppb		98
49) cis-1,3-Dichloropropene	7.255	75	41137	2.02	ppb		97
50) 4-Methyl-2-Pentanone	7.392	43	22858m	2.03	ppb		
52) Toluene	7.556	91	113707	1.98	ppb		100
53) trans-1,3-Dichloropropene	7.823	75	36336	2.09	ppb		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728677.D
Acq On : 18 Sep 2018 10:17 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL2
Misc : QBV7091818A
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 18 10:46:44 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

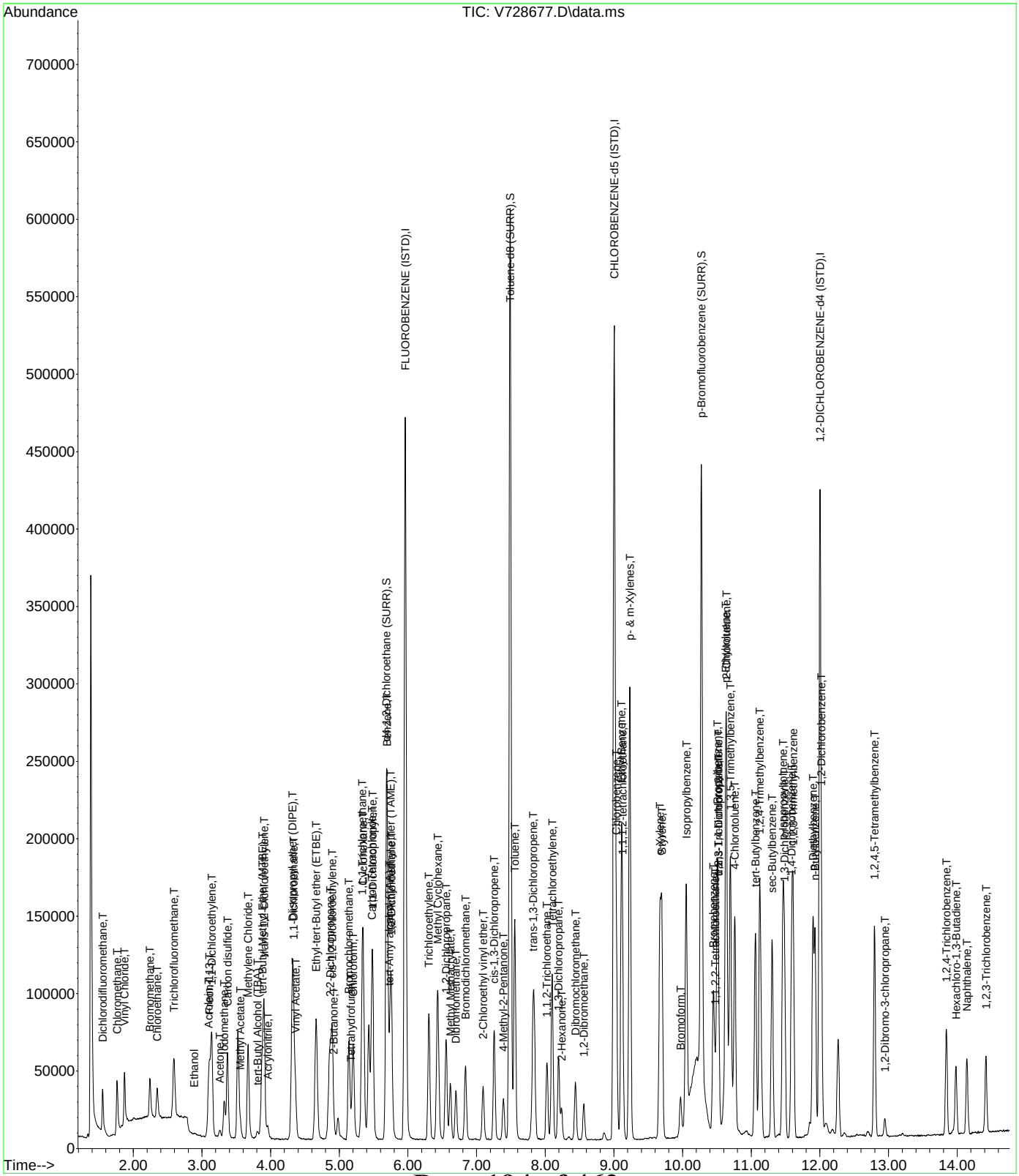
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
54) 1,1,2-Trichloroethane	8.023	97	17957	1.92	ppb		96
55) 1,3-Dichloropropane	8.193	76	31608	1.93	ppb	#	86
56) Tetrachloroethylene	8.101	166	36264	2.23	ppb	#	100
57) 2-Hexanone	8.237	43	16330m	2.26	ppb		
58) Dibromochloromethane	8.441	129	23127	2.13	ppb		98
59) 1,2-Dibromoethane	8.560	107	18014	2.12	ppb		99
60) Chlorobenzene	9.033	112	72454	2.05	ppb	#	93
61) 1,1,1,2-tetrachloroethane	9.125	131	26051	2.14	ppb		99
62) Ethyl Benzene	9.111	91	127386	2.06	ppb		98
63) p- & m-Xylenes	9.231	91	196649	3.49	ppb		97
64) o-Xylene	9.670	91	98440	2.06	ppb		99
65) Styrene	9.698	104	78853	2.18	ppb	#	100
66) Bromoform	9.971	173	13713	2.29	ppb	#	99
68) p-Ethyltoluene	10.630	105	123500	2.38	ppb	#	100
69) Isopropylbenzene	10.054	105	122862	2.20	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.474	83	20191	2.05	ppb	#	68
72) Bromobenzene	10.447	77	45030	2.21	ppb		95
73) trans-1,4-Dichloro-2-b...	10.522	75	24475	2.27	ppb		95
74) 1,2,3-Trichloropropane	10.522	110	5936	2.14	ppb		98
75) n-Propylbenzene	10.508	91	141179	2.13	ppb		98
76) 2-Chlorotoluene	10.639	91	95271	2.12	ppb		99
77) 4-Chlorotoluene	10.761	91	86136	2.11	ppb		98
78) 1,3,5-Trimethylbenzene	10.697	105	99664	2.24	ppb		99
79) tert-Butylbenzene	11.061	119	82495	2.26	ppb		98
80) 1,2,4-Trimethylbenzene	11.123	105	97450	2.23	ppb		100
81) sec-Butylbenzene	11.303	105	110186	2.25	ppb		100
82) 1,3-Dichlorobenzene	11.484	146	52760	2.24	ppb		98
83) p-Isopropyltoluene	11.462	119	101499	2.25	ppb		99
84) 1,4-Dichlorobenzene	11.587	146	53110	2.28	ppb		98
85) 1,2,3-Trimethylbenzene	11.612	105	99795	2.40	ppb		98
86) p-Diethylbenzene	11.899	105	52652	2.35	ppb		93
87) 1,2-Dichlorobenzene	12.021	146	45944	2.18	ppb	#	100
88) n-Butylbenzene	11.929	91	92811m	1.93	ppb		
89) 1,2-Dibromo-3-chloropr...	12.948	75	3295	2.38	ppb		94
90) 1,2,4,5-Tetramethylben...	12.795	119	87941	2.50	ppb		99
91) 1,2,4-Trichlorobenzene	13.844	180	24220	2.55	ppb		98
92) Hexachloro-1,3-Butadiene	13.983	225	11030	2.68	ppb		96
93) Naphthalene	14.141	128	43818	2.75	ppb		98
94) 1,2,3-Trichlorobenzene	14.420	180	17076	2.87	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728677.D
Acq On : 18 Sep 2018 10:17 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL2
Misc : QBV7091818A
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 18 10:46:44 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728678.D
Acq On : 18 Sep 2018 10:49 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL3
Misc : QBV7091818A
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 18 11:08:04 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.962	70	92448	10.00	ppb	#	0.13
40) CHLOROBENZENE-d5 (ISTD)	9.005	117	333527	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	12.002	152	121766	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.686	65	101217	8.97	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery = 89.70%				
51) Toluene-d8 (SURR)	7.489	98	449745	10.44	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery = 104.40%				
70) p-Bromofluorobenzene (...	10.274	95	156209	9.94	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.40%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.552	85	43583	4.63	ppb		100
3) Chloromethane	1.763	50	65598	4.91	ppb		99
4) Vinyl Chloride	1.872	62	58992	5.39	ppb		100
5) Bromomethane	2.242	94	33332	10.95	ppb		100
6) Chloroethane	2.347	64	34960	5.52	ppb		100
7) Trichlorofluoromethane	2.592	101	70215	4.79	ppb		99
8) Ethanol	2.890	45	3069	134.01	ppb	#	52
9) Freon-113	3.104	101	48024	3.99	ppb		97
10) 1,1-Dichloroethylene	3.140	61	81658	3.51	ppb		91
11) Acrolein	3.096	56	4681	3.71	ppb		95
12) Acetone	3.260	43	12268	4.37	ppb	#	100
13) Iodomethane	3.324	142	64912	18.81	ppb		99
14) Methyl Acetate	3.555	43	26339m	3.48	ppb		
15) Carbon disulfide	3.371	76	147523	3.73	ppb		100
16) tert-Butyl Alcohol (TBA)	3.808	59	13615	14.22	ppb	#	100
17) Methylene Chloride	3.672	49	76739	3.47	ppb		92
18) Acrylonitrile	3.956	53	10907m	3.48	ppb		
19) trans-1,2-Dichloroethy...	3.903	61	79226	3.40	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	129276	3.55	ppb		99
21) 1,1-Dichloroethane	4.334	63	98844	3.36	ppb		100
22) Vinyl Acetate	4.359	43	105072m	2.57	ppb		
23) Diisopropyl ether (DIPE)	4.314	45	200446	3.30	ppb		99
24) Ethyl-tert-Butyl ether...	4.662	59	178163	3.43	ppb	#	99
25) cis-1,2-Dichloroethylene	4.893	61	89537	3.36	ppb		97
26) 2-Butanone	4.921	72	4143	3.67	ppb	#	100
27) 2,2-Dichloropropane	4.863	77	77965	3.71	ppb	#	86
28) Tetrahydrofuran	5.169	71	4053m	3.81	ppb		
29) Bromochloromethane	5.138	49	45215	3.23	ppb		93
30) Chloroform	5.202	83	89663	3.52	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	83389	3.57	ppb	#	67
32) Cyclohexane	5.347	56	96784	3.48	ppb		93
33) 1,1-Dichloropropylene	5.486	75	74132	3.68	ppb		99
35) Carbon Tetrachloride	5.475	117	73936	3.67	ppb		99
36) tert-Amyl alcohol (TAA)	5.722	59	33415	34.22	ppb	#	78
37) 1,2-Dichloroethane	5.761	62	59870	3.37	ppb	#	88
38) Benzene	5.697	78	208892	3.56	ppb	#	78
39) tert-Amyl methyl ether...	5.747	73	161181	4.06	ppb	#	99
41) Trichloroethylene	6.307	95	57336	3.98	ppb		95
42) Methyl Cyclohexane	6.435	83	84407	4.22	ppb		92
43) Methyl Methacrylate	6.618	69	26720	3.82	ppb	#	26
44) Dibromomethane	6.699	93	25181	3.66	ppb		95
45) Bromodichloromethane	6.838	83	65945	3.82	ppb		99
46) 1,2-Dichloropropane	6.554	63	54255	3.62	ppb		99
47) 1,4-Dioxane	6.699	88	822	59.78	ppb	#	78
48) 2-Chloroethyl vinyl ether	7.094	63	23815	5.02	ppb		99
49) cis-1,3-Dichloropropene	7.255	75	82264	4.04	ppb		98
50) 4-Methyl-2-Pentanone	7.389	43	42590m	3.78	ppb		
52) Toluene	7.556	91	226480	3.93	ppb		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728678.D
Acq On : 18 Sep 2018 10:49 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL3
Misc : QBV7091818A
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 18 11:08:04 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

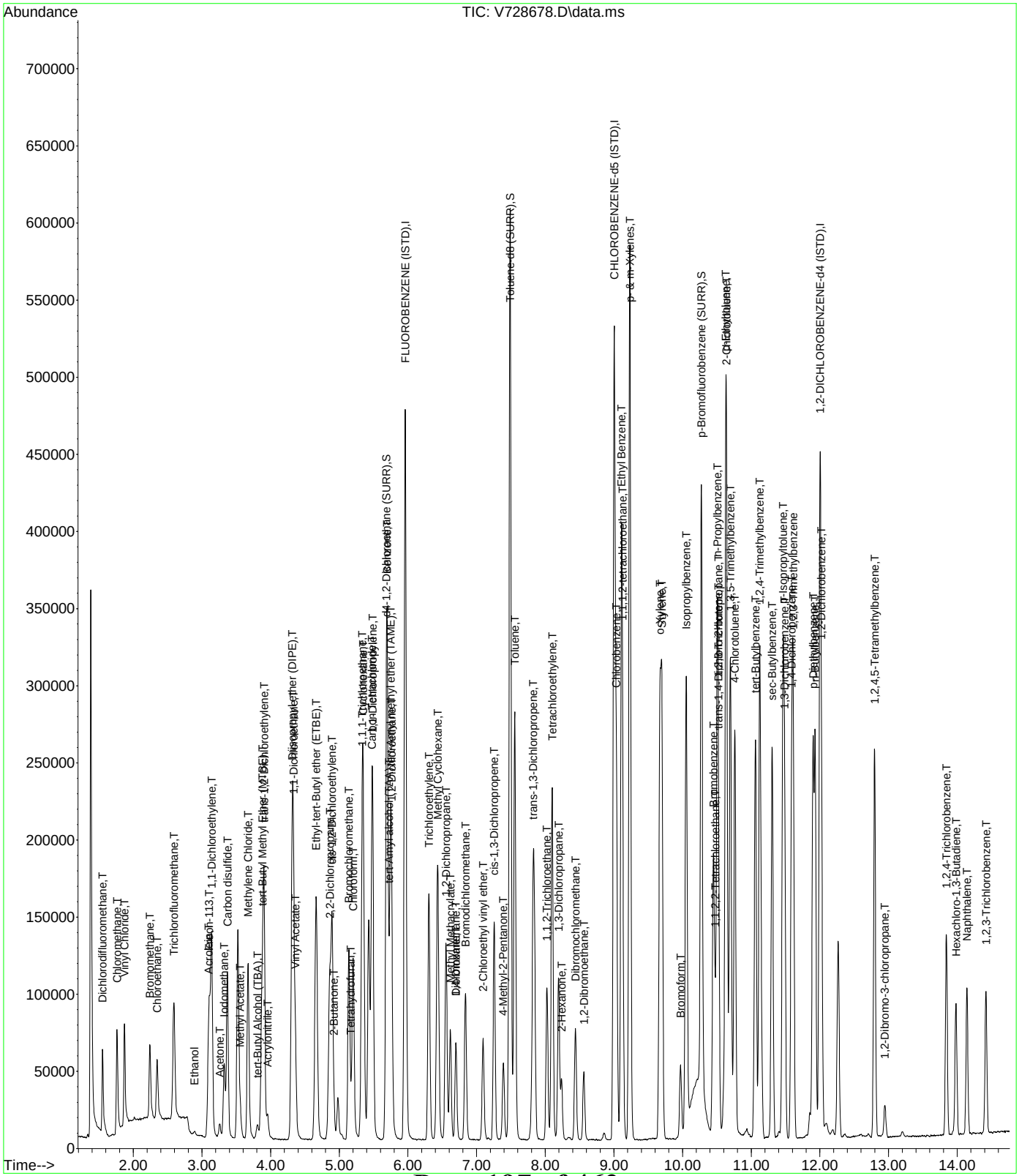
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.823	75	71986	4.13	ppb		99
54) 1,1,2-Trichloroethane	8.023	97	36129	3.85	ppb		97
55) 1,3-Dichloropropane	8.196	76	63509	3.89	ppb	#	86
56) Tetrachloroethylene	8.101	166	76621	4.71	ppb	#	100
57) 2-Hexanone	8.237	43	31256m	4.32	ppb		
58) Dibromochloromethane	8.441	129	44681	4.12	ppb		98
59) 1,2-Dibromoethane	8.563	107	35385	4.16	ppb		98
60) Chlorobenzene	9.036	112	141956	4.01	ppb		98
61) 1,1,1,2-tetrachloroethane	9.125	131	51705	4.24	ppb		100
62) Ethyl Benzene	9.111	91	249831	4.03	ppb		97
63) p- & m-Xylenes	9.231	91	388768	6.90	ppb		97
64) o-Xylene	9.670	91	193353	4.05	ppb		99
65) Styrene	9.698	104	156557	4.33	ppb	#	100
66) Bromoform	9.971	173	26548	4.44	ppb	#	100
68) p-Ethyltoluene	10.630	105	227897	4.38	ppb	#	100
69) Isopropylbenzene	10.051	105	241168	4.29	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.474	83	40900	4.13	ppb	#	68
72) Bromobenzene	10.449	77	87745	4.28	ppb		94
73) trans-1,4-Dichloro-2-b...	10.524	75	47464	4.38	ppb		94
74) 1,2,3-Trichloropropane	10.522	110	11690	4.18	ppb		93
75) n-Propylbenzene	10.508	91	278276	4.18	ppb		99
76) 2-Chlorotoluene	10.638	91	185766	4.11	ppb		99
77) 4-Chlorotoluene	10.761	91	170429	4.15	ppb		98
78) 1,3,5-Trimethylbenzene	10.697	105	196318	4.38	ppb		99
79) tert-Butylbenzene	11.061	119	163963	4.47	ppb		97
80) 1,2,4-Trimethylbenzene	11.123	105	192440	4.38	ppb		100
81) sec-Butylbenzene	11.303	105	218266	4.44	ppb		99
82) 1,3-Dichlorobenzene	11.487	146	103930	4.39	ppb		98
83) p-Isopropyltoluene	11.462	119	199145	4.39	ppb		99
84) 1,4-Dichlorobenzene	11.587	146	103906	4.43	ppb		98
85) 1,2,3-Trimethylbenzene	11.612	105	183894	4.39	ppb		99
86) p-Diethylbenzene	11.902	105	98901	4.39	ppb		96
87) 1,2-Dichlorobenzene	12.021	146	90792	4.29	ppb	#	100
88) n-Butylbenzene	11.929	91	198538	4.10	ppb		99
89) 1,2-Dibromo-3-chloropr...	12.945	75	6429	4.62	ppb		95
90) 1,2,4,5-Tetramethylben...	12.797	119	163510	4.63	ppb		99
91) 1,2,4-Trichlorobenzene	13.844	180	48226	5.06	ppb		97
92) Hexachloro-1,3-Butadiene	13.983	225	20796	5.03	ppb		98
93) Naphthalene	14.141	128	85722	5.35	ppb		99
94) 1,2,3-Trichlorobenzene	14.420	180	33300	5.57	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728678.D
Acq On : 18 Sep 2018 10:49 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL3
Misc : QBV7091818A
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 18 11:08:04 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728679.D
Acq On : 18 Sep 2018 12:01 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL4
Misc : QBV7091818A
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 18 15:15:25 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	113245m	10.00	ppb		0.13
40) CHLOROBENZENE-d5 (ISTD)	9.003	117	376485	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	11.999	152	134431	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.686	65	114326	8.27	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery = 82.70%				
51) Toluene-d8 (SURR)	7.489	98	535766	11.02	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.20%				
70) p-Bromofluorobenzene (...	10.274	95	174860	10.08	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.80%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	102179	8.86	ppb		100
3) Chloromethane	1.763	50	153718	9.38	ppb		99
4) Vinyl Chloride	1.872	62	140904	10.50	ppb		100
5) Bromomethane	2.242	94	79549	21.34	ppb		100
6) Chloroethane	2.348	64	81690	10.53	ppb		99
7) Trichlorofluoromethane	2.592	101	174135	9.69	ppb		100
8) Ethanol	2.890	45	6545	233.31	ppb	#	52
9) Freon-113	3.107	101	123095	8.36	ppb		97
10) 1,1-Dichloroethylene	3.140	61	204438	7.18	ppb		90
11) Acrolein	3.099	56	10911	7.05	ppb		95
12) Acetone	3.257	43	37868	11.01	ppb	#	100
13) Iodomethane	3.324	142	167484	39.62	ppb		99
14) Methyl Acetate	3.555	43	67613	7.30	ppb		99
15) Carbon disulfide	3.371	76	367675	7.58	ppb		100
16) tert-Butyl Alcohol (TBA)	3.805	59	31417m	26.79	ppb		
17) Methylene Chloride	3.672	49	185642	6.85	ppb		92
18) Acrylonitrile	3.956	53	28463m	7.41	ppb		
19) trans-1,2-Dichloroethy...	3.906	61	199963	7.00	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	326787	7.33	ppb		100
21) 1,1-Dichloroethane	4.331	63	247604	6.88	ppb		100
22) Vinyl Acetate	4.362	43	274019m	5.46	ppb		
23) Diisopropyl ether (DIPE)	4.315	45	501127m	6.73	ppb		
24) Ethyl-tert-Butyl ether...	4.662	59	444921m	6.98	ppb		
25) cis-1,2-Dichloroethylene	4.893	61	225981	6.93	ppb		97
26) 2-Butanone	4.918	72	11596m	8.39	ppb		
27) 2,2-Dichloropropane	4.863	77	213736	8.31	ppb	#	100
28) Tetrahydrofuran	5.163	71	10116m	7.76	ppb		
29) Bromochloromethane	5.138	49	113538	6.63	ppb		93
30) Chloroform	5.202	83	224840m	7.20	ppb		
31) 1,1,1-Trichloroethane	5.333	97	210983	7.37	ppb	#	67
32) Cyclohexane	5.347	56	252466m	7.41	ppb		
33) 1,1-Dichloropropylene	5.486	75	190725m	7.73	ppb		
35) Carbon Tetrachloride	5.475	117	187372	7.60	ppb		99
36) tert-Amyl alcohol (TAA)	5.722	59	80004m	66.88	ppb		
37) 1,2-Dichloroethane	5.759	62	152588	7.01	ppb		100
38) Benzene	5.697	78	529998	7.38	ppb	#	77
39) tert-Amyl methyl ether...	5.747	73	408043m	8.39	ppb		
41) Trichloroethylene	6.304	95	140292	8.62	ppb		94
42) Methyl Cyclohexane	6.432	83	220088	9.75	ppb		92
43) Methyl Methacrylate	6.615	69	69474	8.79	ppb	#	100
44) Dibromomethane	6.699	93	64182	8.26	ppb	#	66
45) Bromodichloromethane	6.835	83	169187	8.68	ppb		98
46) 1,2-Dichloropropane	6.554	63	137123	8.10	ppb		99
47) 1,4-Dioxane	6.696	88	1889	121.71	ppb		95
48) 2-Chloroethyl vinyl ether	7.094	63	61185	11.42	ppb		99
49) cis-1,3-Dichloropropene	7.255	75	210709	9.16	ppb		97
50) 4-Methyl-2-Pentanone	7.389	43	108658	8.54	ppb		98
52) Toluene	7.556	91	570332	8.78	ppb		100

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728679.D
Acq On : 18 Sep 2018 12:01 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL4
Misc : QBV7091818A
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 18 15:15:25 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

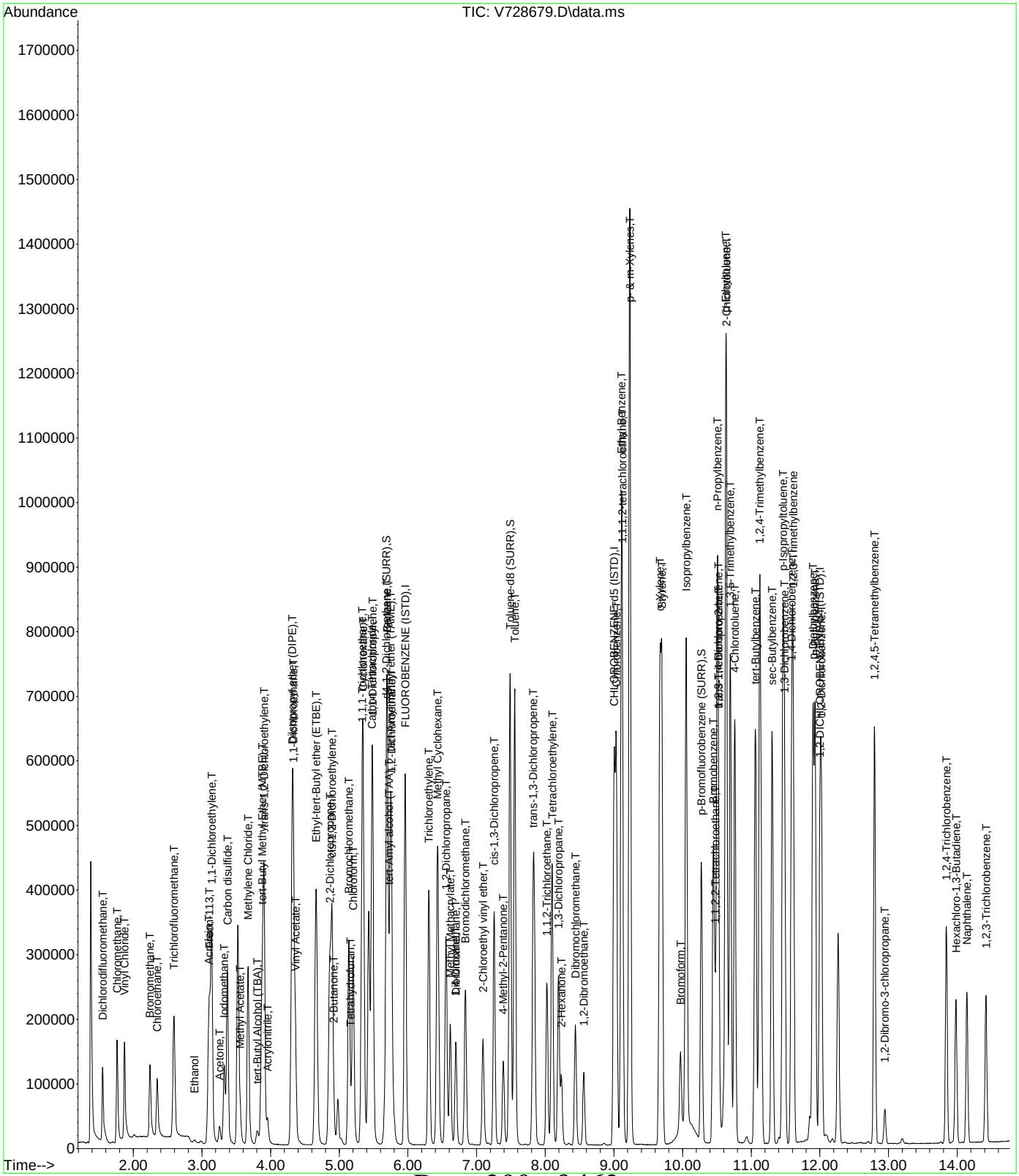
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.823	75	183895	9.35	ppb		99
54) 1,1,2-Trichloroethane	8.023	97	91187	8.62	ppb		98
55) 1,3-Dichloropropane	8.193	76	160119	8.68	ppb	#	100
56) Tetrachloroethylene	8.101	166	148995	8.12	ppb	#	100
57) 2-Hexanone	8.235	43	83653	10.24	ppb		99
58) Dibromochloromethane	8.438	129	115176	9.41	ppb		99
59) 1,2-Dibromoethane	8.560	107	90129	9.38	ppb		98
60) Chlorobenzene	9.033	112	358795	8.99	ppb		98
61) 1,1,1,2-tetrachloroethane	9.122	131	130594	9.48	ppb		99
62) Ethyl Benzene	9.111	91	634624	9.08	ppb		97
63) p- & m-Xylenes	9.231	91	993111	15.63	ppb		97
64) o-Xylene	9.670	91	490218	9.09	ppb		99
65) Styrene	9.698	104	399229	9.77	ppb	#	100
66) Bromoform	9.971	173	69225	10.26	ppb	#	100
68) p-Ethyltoluene	10.630	105	590579	10.27	ppb	#	100
69) Isopropylbenzene	10.052	105	614088	9.89	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.474	83	104796	9.58	ppb	#	68
72) Bromobenzene	10.447	77	222194	9.81	ppb		94
73) trans-1,4-Dichloro-2-b...	10.525	75	123462	10.33	ppb		94
74) 1,2,3-Trichloropropane	10.525	110	29837	9.67	ppb		96
75) n-Propylbenzene	10.508	91	717585	9.76	ppb		99
76) 2-Chlorotoluene	10.639	91	480763	9.64	ppb		99
77) 4-Chlorotoluene	10.761	91	439511	9.70	ppb		99
78) 1,3,5-Trimethylbenzene	10.694	105	501621	10.15	ppb		99
79) tert-Butylbenzene	11.061	119	415137	10.26	ppb		97
80) 1,2,4-Trimethylbenzene	11.123	105	492716	10.16	ppb		99
81) sec-Butylbenzene	11.304	105	560051	10.32	ppb		99
82) 1,3-Dichlorobenzene	11.487	146	266760	10.20	ppb		98
83) p-Isopropyltoluene	11.462	119	516200	10.31	ppb		99
84) 1,4-Dichlorobenzene	11.587	146	265914	10.28	ppb		98
85) 1,2,3-Trimethylbenzene	11.610	105	474187	10.26	ppb		99
86) p-Diethylbenzene	11.899	105	255771	10.29	ppb		96
87) 1,2-Dichlorobenzene	12.021	146	230152	9.84	ppb	#	100
88) n-Butylbenzene	11.930	91	517656	9.69	ppb		99
89) 1,2-Dibromo-3-chloropr...	12.945	75	15898	10.36	ppb		93
90) 1,2,4,5-Tetramethylben...	12.795	119	422998	10.84	ppb		99
91) 1,2,4-Trichlorobenzene	13.844	180	122912	11.68	ppb		98
92) Hexachloro-1,3-Butadiene	13.983	225	54810	12.01	ppb		98
93) Naphthalene	14.141	128	216341	12.22	ppb		99
94) 1,2,3-Trichlorobenzene	14.420	180	82831	12.55	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728679.D
Acq On : 18 Sep 2018 12:01 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL4
Misc : QBV7091818A
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 18 15:15:25 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728680.D
Acq On : 18 Sep 2018 12:32 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL5
Misc : QBV7091818A
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 18 12:52:01 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.962	70	102664m	10.00	ppb		0.13
40) CHLOROBENZENE-d5 (ISTD)	9.005	117	361085	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	12.002	152	130788	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.686	65	111432	8.89	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery = 88.90%				
51) Toluene-d8 (SURR)	7.489	98	493141	10.58	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.80%				
70) p-Bromofluorobenzene (...	10.274	95	171058	10.13	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery = 101.30%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.554	85	227117	21.72	ppb		100
3) Chloromethane	1.763	50	331601	22.33	ppb		99
4) Vinyl Chloride	1.872	62	300240	24.68	ppb		100
5) Bromomethane	2.242	94	164265	48.60	ppb		100
6) Chloroethane	2.347	64	171963	24.45	ppb		100
7) Trichlorofluoromethane	2.589	101	363446	22.31	ppb		100
8) Ethanol	2.893	45	24328	956.61	ppb	#	52
9) Freon-113	3.107	101	246576	18.46	ppb		97
10) 1,1-Dichloroethylene	3.140	61	413265	16.02	ppb		90
11) Acrolein	3.099	56	18538	13.21	ppb		93
12) Acetone	3.257	43	77056	24.72	ppb	#	100
13) Iodomethane	3.324	142	367000	95.78	ppb		99
14) Methyl Acetate	3.555	43	140940	16.77	ppb		99
15) Carbon disulfide	3.371	76	745369	16.96	ppb		100
16) tert-Butyl Alcohol (TBA)	3.805	59	62669m	58.96	ppb		
17) Methylene Chloride	3.672	49	369819	15.05	ppb		93
18) Acrylonitrile	3.956	53	56810m	16.31	ppb		
19) trans-1,2-Dichloroethy...	3.905	61	405269	15.65	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	654396	16.18	ppb		100
21) 1,1-Dichloroethane	4.334	63	502202	15.39	ppb		100
22) Vinyl Acetate	4.359	43	501281m	11.02	ppb		
23) Diisopropyl ether (DIPE)	4.314	45	1019244m	15.09	ppb		
24) Ethyl-tert-Butyl ether...	4.662	59	907464m	15.71	ppb		
25) cis-1,2-Dichloroethylene	4.893	61	449605	15.20	ppb		96
26) 2-Butanone	4.918	72	22561m	18.01	ppb		
27) 2,2-Dichloropropane	4.863	77	381416	16.35	ppb	#	100
28) Tetrahydrofuran	5.163	71	20340m	17.20	ppb		
29) Bromochloromethane	5.138	49	227722	14.66	ppb		93
30) Chloroform	5.202	83	459600m	16.23	ppb		
31) 1,1,1-Trichloroethane	5.333	97	421446	16.24	ppb	#	100
32) Cyclohexane	5.347	56	512665	16.59	ppb		93
33) 1,1-Dichloropropylene	5.486	75	386940m	17.30	ppb		
35) Carbon Tetrachloride	5.475	117	382469m	17.11	ppb		
36) tert-Amyl alcohol (TAA)	5.722	59	197877m	182.46	ppb		
37) 1,2-Dichloroethane	5.758	62	305783	15.49	ppb		99
38) Benzene	5.697	78	1061393	16.30	ppb	#	73
39) tert-Amyl methyl ether...	5.747	73	854445m	19.39	ppb		
41) Trichloroethylene	6.304	95	290079	18.58	ppb		94
42) Methyl Cyclohexane	6.432	83	441287	20.39	ppb		92
43) Methyl Methacrylate	6.618	69	140101	18.49	ppb	#	99
44) Dibromomethane	6.699	93	128130	17.18	ppb		94
45) Bromodichloromethane	6.838	83	341013	18.24	ppb		99
46) 1,2-Dichloropropane	6.554	63	275874	16.99	ppb		99
47) 1,4-Dioxane	6.696	88	7427m	498.92	ppb		
48) 2-Chloroethyl vinyl ether	7.094	63	125565	24.44	ppb		99
49) cis-1,3-Dichloropropene	7.255	75	416867	18.90	ppb		97
50) 4-Methyl-2-Pentanone	7.389	43	217379	17.82	ppb		98
52) Toluene	7.556	91	1143057	18.34	ppb		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728680.D
Acq On : 18 Sep 2018 12:32 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL5
Misc : QBV7091818A
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 18 12:52:01 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

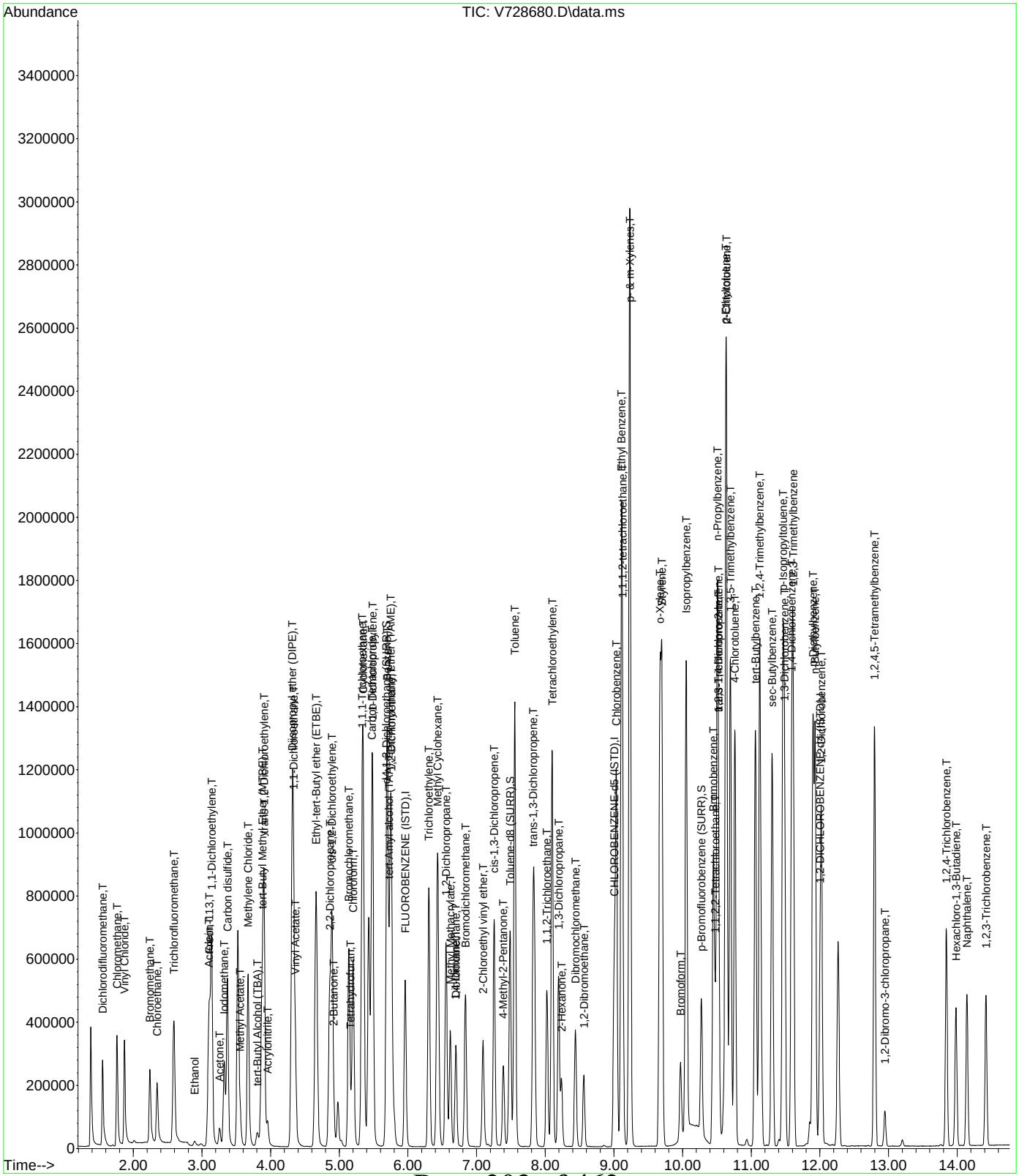
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.823	75	359209	19.04	ppb		99
54) 1,1,2-Trichloroethane	8.023	97	181817	17.92	ppb		97
55) 1,3-Dichloropropane	8.196	76	324152	18.32	ppb	#	100
56) Tetrachloroethylene	8.101	166	423374	24.05	ppb	#	100
57) 2-Hexanone	8.237	43	169286	21.60	ppb		98
58) Dibromochloromethane	8.438	129	230260	19.61	ppb		99
59) 1,2-Dibromoethane	8.563	107	180522	19.58	ppb		99
60) Chlorobenzene	9.036	112	720946	18.83	ppb		97
61) 1,1,1,2-tetrachloroethane	9.125	131	265223	20.08	ppb		99
62) Ethyl Benzene	9.111	91	1282296	19.13	ppb		98
63) p- & m-Xylenes	9.231	91	2002488	32.85	ppb		97
64) o-Xylene	9.670	91	990497	19.16	ppb		99
65) Styrene	9.698	104	805580	20.56	ppb	#	100
66) Bromoform	9.971	173	139082	21.48	ppb	#	99
68) p-Ethyltoluene	10.630	105	1203552	21.51	ppb	#	100
69) Isopropylbenzene	10.051	105	1230493	20.37	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.474	83	205301	19.29	ppb	#	68
72) Bromobenzene	10.446	77	447107	20.29	ppb		94
73) trans-1,4-Dichloro-2-b...	10.524	75	247355	21.27	ppb		92
74) 1,2,3-Trichloropropane	10.524	110	59165	19.71	ppb		96
75) n-Propylbenzene	10.508	91	1430922	20.01	ppb		98
76) 2-Chlorotoluene	10.638	91	973878	20.06	ppb		99
77) 4-Chlorotoluene	10.761	91	884217	20.05	ppb		98
78) 1,3,5-Trimethylbenzene	10.697	105	1014252	21.09	ppb		99
79) tert-Butylbenzene	11.061	119	832439	21.14	ppb		97
80) 1,2,4-Trimethylbenzene	11.123	105	983796	20.85	ppb		99
81) sec-Butylbenzene	11.303	105	1106227	20.95	ppb		99
82) 1,3-Dichlorobenzene	11.487	146	538513	21.17	ppb		98
83) p-Isopropyltoluene	11.462	119	1024189	21.03	ppb		99
84) 1,4-Dichlorobenzene	11.587	146	534356	21.22	ppb		98
85) 1,2,3-Trimethylbenzene	11.609	105	961647	21.39	ppb		99
86) p-Diethylbenzene	11.899	105	518000	21.41	ppb		95
87) 1,2-Dichlorobenzene	12.021	146	468061	20.57	ppb	#	100
88) n-Butylbenzene	11.929	91	975768m	18.77	ppb		
89) 1,2-Dibromo-3-chloropr...	12.948	75	32034	21.45	ppb		90
90) 1,2,4,5-Tetramethylben...	12.795	119	874461	23.04	ppb		99
91) 1,2,4-Trichlorobenzene	13.844	180	249801	24.40	ppb		98
92) Hexachloro-1,3-Butadiene	13.983	225	110094	24.80	ppb		98
93) Naphthalene	14.141	128	455782	26.46	ppb		100
94) 1,2,3-Trichlorobenzene	14.420	180	176930	27.55	ppb		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728680.D
Acq On : 18 Sep 2018 12:32 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL5
Misc : QBV7091818A
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 18 12:52:01 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728681.D
Acq On : 18 Sep 2018 1:04 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL6
Misc : QBV7091818A
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 18 13:32:03 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.962	70	105204m	10.00	ppb		0.13
40) CHLOROBENZENE-d5 (ISTD)	9.005	117	369793	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	12.002	152	135049	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.686	65	116292	9.05	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery = 90.50%				
51) Toluene-d8 (SURR)	7.489	98	505697	10.59	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.90%				
70) p-Bromofluorobenzene (...	10.274	95	173437	9.95	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.50%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.552	85	460875	43.01	ppb		100
3) Chloromethane	1.760	50	679980	44.69	ppb		99
4) Vinyl Chloride	1.872	62	615100	49.34	ppb		100
5) Bromomethane	2.242	94	351168	101.40	ppb		99
6) Chloroethane	2.347	64	356647	49.49	ppb		100
7) Trichlorofluoromethane	2.592	101	744009	44.58	ppb		100
8) Ethanol	2.890	45	19540	749.79	ppb	#	52
9) Freon-113	3.107	101	488060	35.66	ppb		97
10) 1,1-Dichloroethylene	3.140	61	850779	32.18	ppb		91
11) Acrolein	3.096	56	35104	24.42	ppb		96
12) Acetone	3.257	43	128022	40.08	ppb	#	100
13) Iodomethane	3.324	142	753435	191.88	ppb		99
14) Methyl Acetate	3.555	43	271020	31.48	ppb		99
15) Carbon disulfide	3.371	76	1518308	33.71	ppb		100
16) tert-Butyl Alcohol (TBA)	3.805	59	71270m	65.43	ppb		
17) Methylene Chloride	3.672	49	746970	29.67	ppb		92
18) Acrylonitrile	3.956	53	110076m	30.84	ppb		
19) trans-1,2-Dichloroethy...	3.905	61	832259	31.37	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	1345730	32.48	ppb		100
21) 1,1-Dichloroethane	4.334	63	1029899	30.79	ppb		100
22) Vinyl Acetate	4.359	43	969226m	20.80	ppb		
23) Diisopropyl ether (DIPE)	4.314	45	2045144m	29.56	ppb		
24) Ethyl-tert-Butyl ether...	4.662	59	1830522m	30.92	ppb		
25) cis-1,2-Dichloroethylene	4.896	61	929842	30.67	ppb		97
26) 2-Butanone	4.918	72	40477m	31.53	ppb		
27) 2,2-Dichloropropane	4.863	77	771209	32.26	ppb	#	86
28) Tetrahydrofuran	5.163	71	38662m	31.91	ppb		
29) Bromochloromethane	5.138	49	466453	29.31	ppb		93
30) Chloroform	5.202	83	944618m	32.56	ppb		
31) 1,1,1-Trichloroethane	5.336	97	873010	32.84	ppb	#	67
32) Cyclohexane	5.347	56	1017045	32.12	ppb		94
33) 1,1-Dichloropropylene	5.486	75	797634m	34.80	ppb		
35) Carbon Tetrachloride	5.477	117	787828	34.38	ppb		100
36) tert-Amyl alcohol (TAA)	5.722	59	318584m	286.67	ppb		
37) 1,2-Dichloroethane	5.761	62	633533m	31.31	ppb		
38) Benzene	5.697	78	2180134	32.66	ppb	#	72
39) tert-Amyl methyl ether...	5.747	73	1685002m	37.31	ppb		
41) Trichloroethylene	6.307	95	599188	37.47	ppb		94
42) Methyl Cyclohexane	6.435	83	873011	39.39	ppb		91
43) Methyl Methacrylate	6.618	69	286065	36.86	ppb	#	26
44) Dibromomethane	6.699	93	264981	34.70	ppb		94
45) Bromodichloromethane	6.838	83	705326	36.84	ppb		98
46) 1,2-Dichloropropane	6.554	63	570539	34.32	ppb		99
47) 1,4-Dioxane	6.696	88	6909m	453.19	ppb		
48) 2-Chloroethyl vinyl ether	7.097	63	250154	47.54	ppb		99
49) cis-1,3-Dichloropropene	7.258	75	854295	37.83	ppb		97
50) 4-Methyl-2-Pentanone	7.389	43	440694	35.28	ppb		98
52) Toluene	7.556	91	2324221	36.42	ppb		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728681.D
Acq On : 18 Sep 2018 1:04 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL6
Misc : QBV7091818A
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 18 13:32:03 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration

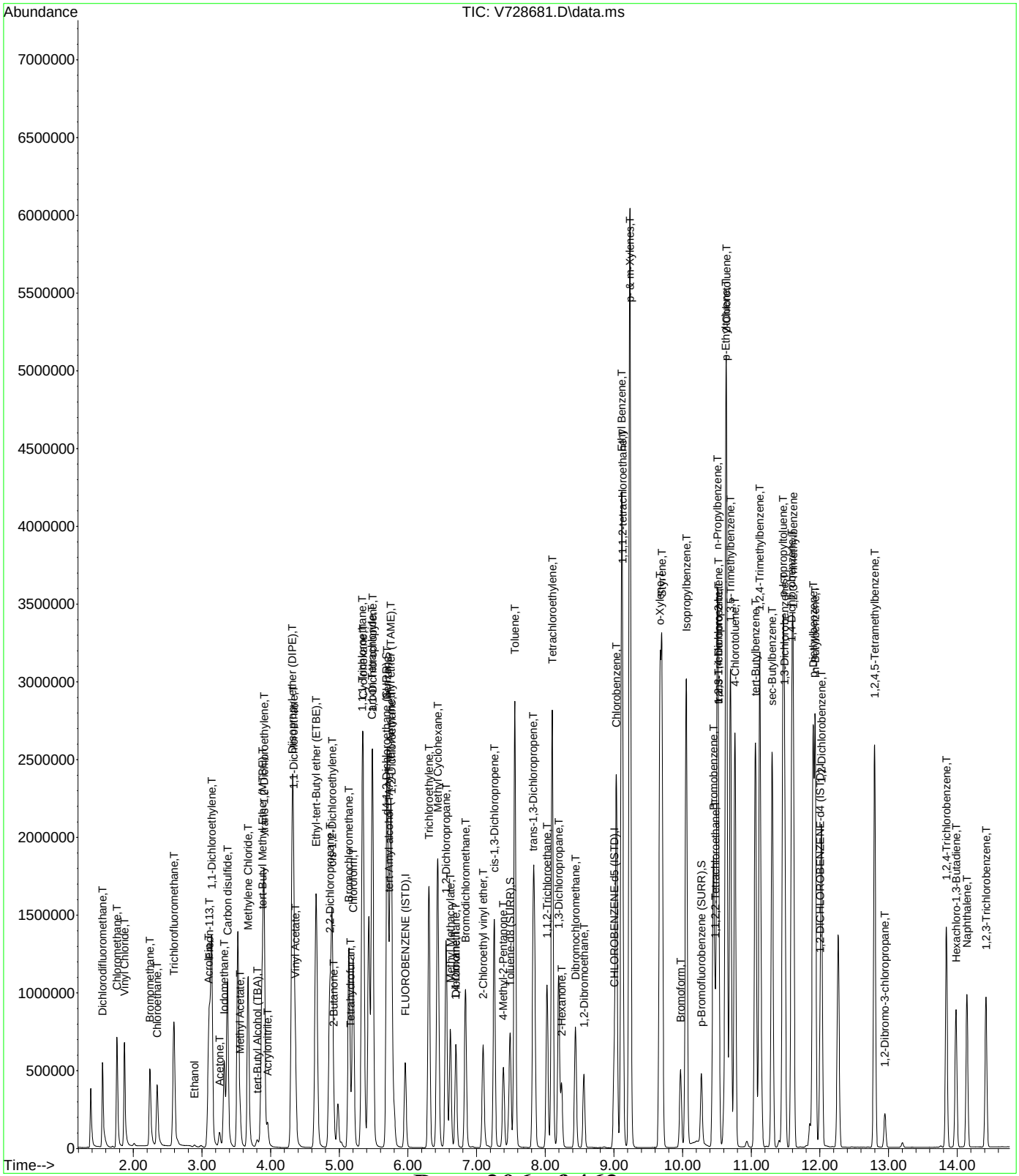
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.823	75	741987	38.40	ppb		100
54) 1,1,2-Trichloroethane	8.026	97	373334	35.93	ppb		97
55) 1,3-Dichloropropane	8.196	76	671465	37.06	ppb	#	100
56) Tetrachloroethylene	8.101	166	949618	52.67	ppb	#	100
57) 2-Hexanone	8.237	43	325876	40.59	ppb		96
58) Dibromochloromethane	8.441	129	480095	39.93	ppb		99
59) 1,2-Dibromoethane	8.563	107	372838	39.49	ppb		98
60) Chlorobenzene	9.036	112	1472724	37.56	ppb		96
61) 1,1,1,2-tetrachloroethane	9.125	131	551901	40.80	ppb		99
62) Ethyl Benzene	9.114	91	2600389	37.88	ppb		97
63) p- & m-Xylenes	9.233	91	4048346	64.85	ppb		96
64) o-Xylene	9.670	91	2012097	38.00	ppb		99
65) Styrene	9.698	104	1652515	41.18	ppb	#	100
66) Bromoform	9.971	173	290594	43.83	ppb	#	99
68) p-Ethyltoluene	10.630	105	2367630m	40.98	ppb		
69) Isopropylbenzene	10.054	105	2482825	39.80	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.474	83	420443	38.26	ppb	#	68
72) Bromobenzene	10.449	77	914730	40.21	ppb		94
73) trans-1,4-Dichloro-2-b...	10.524	75	509732	42.45	ppb		91
74) 1,2,3-Trichloropropane	10.524	110	121969	39.36	ppb		96
75) n-Propylbenzene	10.508	91	2873148	38.91	ppb		98
76) 2-Chlorotoluene	10.638	91	1966286	39.23	ppb		99
77) 4-Chlorotoluene	10.764	91	1795972	39.44	ppb		98
78) 1,3,5-Trimethylbenzene	10.697	105	2040204	41.08	ppb		99
79) tert-Butylbenzene	11.061	119	1668149	41.04	ppb		97
80) 1,2,4-Trimethylbenzene	11.123	105	1996256	40.98	ppb		99
81) sec-Butylbenzene	11.303	105	2219588	40.71	ppb		99
82) 1,3-Dichlorobenzene	11.487	146	1105198	42.07	ppb		98
83) p-Isopropyltoluene	11.462	119	2073472	41.24	ppb		99
84) 1,4-Dichlorobenzene	11.590	146	1105391	42.52	ppb		98
85) 1,2,3-Trimethylbenzene	11.612	105	1941726	41.83	ppb		99
86) p-Diethylbenzene	11.902	105	1040585	41.66	ppb		97
87) 1,2-Dichlorobenzene	12.024	146	968173	41.21	ppb	#	100
88) n-Butylbenzene	11.932	91	1994000m	37.15	ppb		
89) 1,2-Dibromo-3-chloropr...	12.945	75	64092	41.57	ppb		90
90) 1,2,4,5-Tetramethylben...	12.797	119	1722823	43.95	ppb		99
91) 1,2,4-Trichlorobenzene	13.844	180	513543	48.58	ppb		98
92) Hexachloro-1,3-Butadiene	13.983	225	223472	48.76	ppb		98
93) Naphthalene	14.141	128	922365	51.87	ppb		100
94) 1,2,3-Trichlorobenzene	14.420	180	356959	53.82	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728681.D
Acq On : 18 Sep 2018 1:04 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL6
Misc : QBV7091818A
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Sep 18 13:32:03 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Wed Sep 05 09:12:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728682.D
Acq On : 18 Sep 2018 1:36 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL7
Misc : QBV7091818A
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 18 13:56:33 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:30:59 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.962	70	104536m	10.00	ppb		0.13
40) CHLOROBENZENE-d5 (ISTD)	9.005	117	361286	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	12.002	152	135967	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.686	65	113906	8.93	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery = 89.30%				
51) Toluene-d8 (SURR)	7.489	98	490580	10.52	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.20%				
70) p-Bromofluorobenzene (...	10.274	95	169718	9.67	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.70%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.554	85	782588	73.50	ppb		100
3) Chloromethane	1.763	50	1399047	92.53	ppb		99
4) Vinyl Chloride	1.872	62	1198097	96.72	ppb		100
5) Bromomethane	2.242	94	756620	219.87	ppb		99
6) Chloroethane	2.347	64	716608	100.08	ppb		100
7) Trichlorofluoromethane	2.592	101	1304875	78.68	ppb		100
8) Ethanol	2.893	45	73754	2848.17	ppb	#	52
9) Freon-113	3.107	101	820899	60.37	ppb		97
10) 1,1-Dichloroethylene	3.140	61	1652828	62.91	ppb		96
11) Acrolein	3.099	56	74583	52.21	ppb		95
12) Acetone	3.257	43	229245	72.23	ppb	#	100
13) Iodomethane	3.324	142	1471114	377.04	ppb		99
14) Methyl Acetate	3.555	43	577766	67.53	ppb		99
15) Carbon disulfide	3.371	76	3032716	67.77	ppb		100
16) tert-Butyl Alcohol (TBA)	3.805	59	174922m	161.61	ppb		
17) Methylene Chloride	3.672	49	1556577	62.22	ppb		92
18) Acrylonitrile	3.878	53	29020m	8.18	ppb		
19) trans-1,2-Dichloroethy...	3.905	61	1717870	65.16	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	2811101	68.28	ppb		100
21) 1,1-Dichloroethane	4.334	63	2134168	64.21	ppb		100
22) Vinyl Acetate	4.362	43	2131506m	46.04	ppb		
23) Diisopropyl ether (DIPE)	4.317	45	4022736	58.51	ppb		99
24) Ethyl-tert-Butyl ether...	4.662	59	3774064m	64.17	ppb		
25) cis-1,2-Dichloroethylene	4.896	61	1942070	64.48	ppb		96
26) 2-Butanone	4.918	72	85452m	66.98	ppb		
27) 2,2-Dichloropropane	4.863	77	1552672	65.36	ppb	#	100
28) Tetrahydrofuran	5.163	71	83179m	69.09	ppb		
29) Bromochloromethane	5.138	49	920466	58.21	ppb		92
30) Chloroform	5.202	83	1974441m	68.49	ppb		
31) 1,1,1-Trichloroethane	5.336	97	1725849	65.33	ppb	#	99
32) Cyclohexane	5.347	56	1721334	54.70	ppb		94
33) 1,1-Dichloropropylene	5.486	75	1561468m	68.56	ppb		
35) Carbon Tetrachloride	5.477	117	1503105m	66.02	ppb		
36) tert-Amyl alcohol (TAA)	5.722	59	754457m	683.22	ppb		
37) 1,2-Dichloroethane	5.761	62	1321703	65.74	ppb		99
38) Benzene	5.700	78	4465055	67.33	ppb	#	71
39) tert-Amyl methyl ether...	5.747	73	3581156m	79.80	ppb		
41) Trichloroethylene	6.307	95	1228924	78.66	ppb		95
42) Methyl Cyclohexane	6.435	83	1435064	66.28	ppb		91
43) Methyl Methacrylate	6.618	69	610842	80.55	ppb	#	26
44) Dibromomethane	6.699	93	563609	75.54	ppb		94
45) Bromodichloromethane	6.838	83	1489859	79.66	ppb		98
46) 1,2-Dichloropropane	6.557	63	1197939	73.76	ppb		99
47) 1,4-Dioxane	6.696	88	21549	1446.78	ppb		97
48) 2-Chloroethyl vinyl ether	7.097	63	527586	102.62	ppb		99
49) cis-1,3-Dichloropropene	7.258	75	1795671	81.39	ppb		96
50) 4-Methyl-2-Pentanone	7.392	43	927804	76.03	ppb		98
52) Toluene	7.559	91	4718688	75.68	ppb		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728682.D
Acq On : 18 Sep 2018 1:36 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL7
Misc : QBV7091818A
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 18 13:56:33 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:30:59 2018
Response via : Initial Calibration

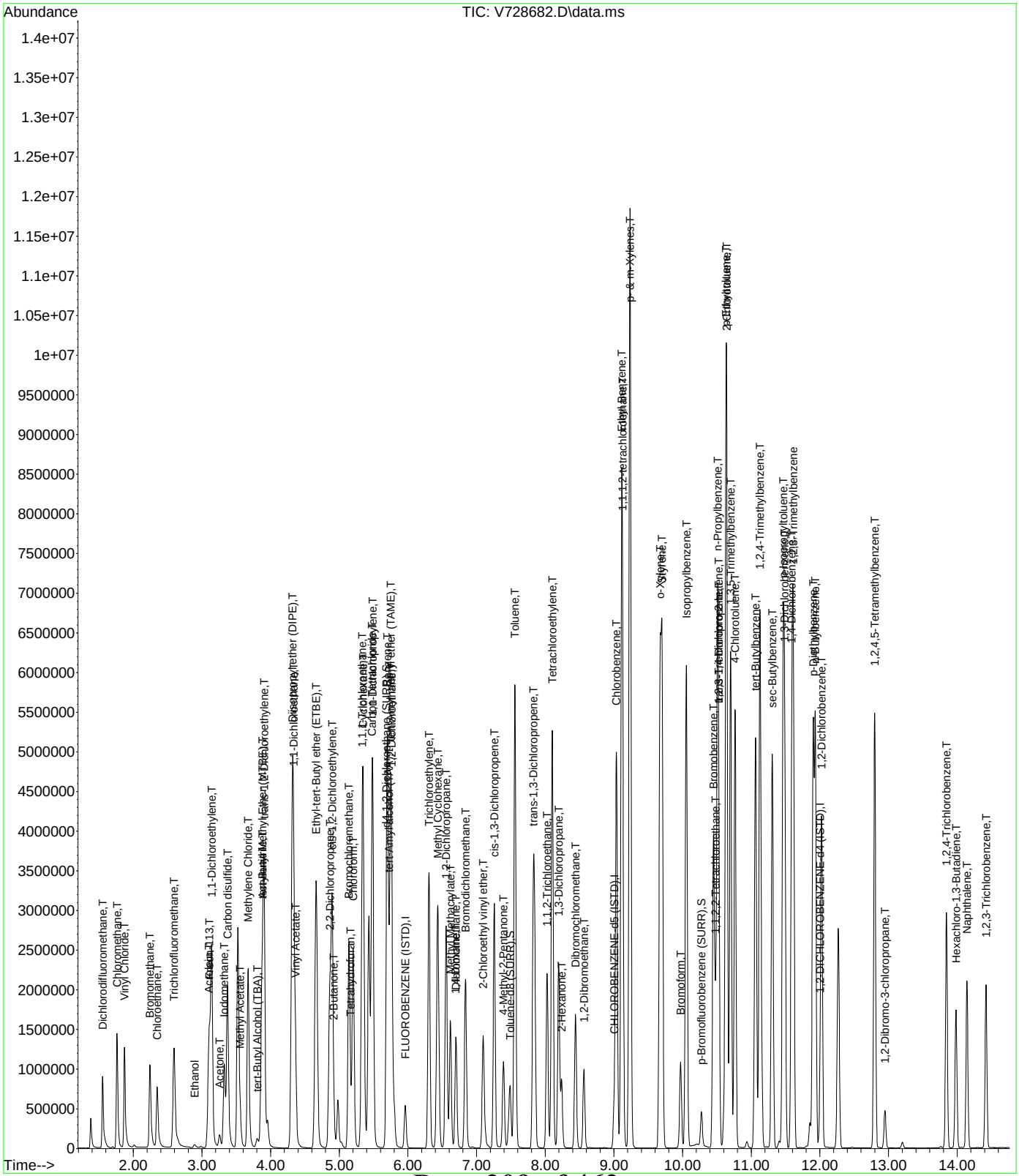
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.826	75	1554772	82.36	ppb		99
54) 1,1,2-Trichloroethane	8.026	97	786074	77.42	ppb		97
55) 1,3-Dichloropropane	8.196	76	1404873	79.37	ppb	#	100
56) Tetrachloroethylene	8.101	166	1759679	99.90	ppb	#	100
57) 2-Hexanone	8.237	43	667792	85.14	ppb		95
58) Dibromochloromethane	8.441	129	1018573	86.71	ppb		98
59) 1,2-Dibromoethane	8.563	107	788127	85.45	ppb		98
60) Chlorobenzene	9.036	112	3044120	79.47	ppb		97
61) 1,1,1,2-tetrachloroethane	9.125	131	1139455	86.21	ppb		99
62) Ethyl Benzene	9.114	91	5263689	78.48	ppb		97
63) p- & m-Xylenes	9.233	91	8010045	131.33	ppb		96
64) o-Xylene	9.673	91	4139614	80.01	ppb		99
65) Styrene	9.701	104	3395330	86.59	ppb	#	100
66) Bromoform	9.971	173	615588	95.04	ppb	#	99
68) p-Ethyltoluene	10.633	105	4629572	79.60	ppb	#	99
69) Isopropylbenzene	10.054	105	4895066	77.95	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.477	83	894777	80.87	ppb	#	68
72) Bromobenzene	10.449	77	1903603	83.12	ppb		94
73) trans-1,4-Dichloro-2-b...	10.527	75	1067712	88.33	ppb		89
74) 1,2,3-Trichloropropane	10.527	110	253798	81.34	ppb		96
75) n-Propylbenzene	10.511	91	5616223	75.55	ppb		97
76) 2-Chlorotoluene	10.641	91	3966333	78.59	ppb		99
77) 4-Chlorotoluene	10.764	91	3652214	79.66	ppb		98
78) 1,3,5-Trimethylbenzene	10.700	105	4053137	81.06	ppb		99
79) tert-Butylbenzene	11.061	119	3268864	79.87	ppb		98
80) 1,2,4-Trimethylbenzene	11.125	105	4074405	83.07	ppb		99
81) sec-Butylbenzene	11.306	105	4250357	77.44	ppb		99
82) 1,3-Dichlorobenzene	11.487	146	2277648	86.12	ppb		99
83) p-Isopropyltoluene	11.465	119	4088893	80.78	ppb		99
84) 1,4-Dichlorobenzene	11.590	146	2288922	87.45	ppb		99
85) 1,2,3-Trimethylbenzene	11.612	105	3976429	85.09	ppb		98
86) p-Diethylbenzene	11.902	105	2094949	83.30	ppb		94
87) 1,2-Dichlorobenzene	12.024	146	2018683	85.35	ppb	#	100
88) n-Butylbenzene	11.932	91	3799961m	70.31	ppb		
89) 1,2-Dibromo-3-chloropr...	12.948	75	138125	88.98	ppb		89
90) 1,2,4,5-Tetramethylben...	12.798	119	3575859	90.61	ppb		99
91) 1,2,4-Trichlorobenzene	13.844	180	1080394	101.52	ppb		97
92) Hexachloro-1,3-Butadiene	13.983	225	435939	94.47	ppb		98
93) Naphthalene	14.141	128	1946623	108.72	ppb		99
94) 1,2,3-Trichlorobenzene	14.420	180	750402	112.38	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728682.D
Acq On : 18 Sep 2018 1:36 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL7
Misc : QBV7091818A
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 18 13:56:33 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:30:59 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728683.D
Acq On : 18 Sep 2018 2:08 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL8
Misc : QBV7091818A
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 18 14:41:13 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:57:06 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.962	70	107751m	10.00	ppb		0.13
40) CHLOROBENZENE-d5 (ISTD)	9.005	117	368906	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	12.002	152	138007	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.689	65	117844	8.96	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery = 89.60%				
51) Toluene-d8 (SURR)	7.489	98	502483	10.55	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.50%				
70) p-Bromofluorobenzene (...	10.274	95	172369	9.68	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.80%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	1203952	109.70	ppb		100
3) Chloromethane	1.761	50	2200576	141.20	ppb		99
4) Vinyl Chloride	1.872	62	1875280	146.88	ppb		100
5) Bromomethane	2.242	94	1157795	326.41	ppb		99
6) Chloroethane	2.348	64	1094172	148.25	ppb		100
7) Trichlorofluoromethane	2.595	101	1998416	116.90	ppb		100
8) Ethanol	2.890	45	169012	6332.02	ppb	#	52
9) Freon-113	3.107	101	1288491	91.93	ppb		97
10) 1,1-Dichloroethylene	3.143	61	2576107	95.13	ppb		95
11) Acrolein	3.096	56	117209	79.61	ppb		95
12) Acetone	3.257	43	395231	120.82	ppb	#	100
13) Iodomethane	3.324	142	2081440	517.55	ppb		100
14) Methyl Acetate	3.555	43	896198	101.63	ppb		99
15) Carbon disulfide	3.371	76	4685093	101.56	ppb		100
16) tert-Butyl Alcohol (TBA)	3.805	59	315573m	282.87	ppb		
17) Methylene Chloride	3.672	49	2375843	92.13	ppb		92
18) Acrylonitrile	3.956	53	370967m	101.48	ppb		
19) trans-1,2-Dichloroethy...	3.906	61	2647131	97.41	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	4302467	101.38	ppb		100
21) 1,1-Dichloroethane	4.334	63	3250317	94.88	ppb		100
22) Vinyl Acetate	4.362	43	3056884m	64.06	ppb		
23) Diisopropyl ether (DIPE)	4.317	45	6335377m	89.39	ppb		
24) Ethyl-tert-Butyl ether...	4.662	59	5744952m	94.76	ppb		
25) cis-1,2-Dichloroethylene	4.896	61	2963940	95.46	ppb		96
26) 2-Butanone	4.918	72	135472m	103.03	ppb		
27) 2,2-Dichloropropane	4.863	77	2382522	97.30	ppb	#	86
28) Tetrahydrofuran	5.166	71	132230m	106.56	ppb		
29) Bromochloromethane	5.141	49	1368197	83.94	ppb		92
30) Chloroform	5.202	83	3021618m	101.69	ppb		
31) 1,1,1-Trichloroethane	5.336	97	2663754	97.82	ppb	#	100
32) Cyclohexane	5.347	56	2665546	82.18	ppb		94
33) 1,1-Dichloropropylene	5.486	75	2416194m	102.93	ppb		
35) Carbon Tetrachloride	5.478	117	2317862m	98.77	ppb		
36) tert-Amyl alcohol (TAA)	5.722	59	1281078m	1125.50	ppb		
37) 1,2-Dichloroethane	5.761	62	1988383	95.95	ppb		99
38) Benzene	5.700	78	6712443	98.19	ppb	#	71
39) tert-Amyl methyl ether...	5.750	73	5480756m	118.49	ppb		
41) Trichloroethylene	6.307	95	1901041	119.17	ppb		95
42) Methyl Cyclohexane	6.435	83	2228695	100.80	ppb		91
43) Methyl Methacrylate	6.618	69	939057	121.28	ppb	#	26
44) Dibromomethane	6.699	93	869005	114.07	ppb		95
45) Bromodichloromethane	6.838	83	2275669	119.16	ppb		98
46) 1,2-Dichloropropane	6.557	63	1835361	110.67	ppb		99
47) 1,4-Dioxane	6.699	88	49166	3232.77	ppb		95
48) 2-Chloroethyl vinyl ether	7.097	63	812278	154.73	ppb		99
49) cis-1,3-Dichloropropene	7.258	75	2728589	121.12	ppb		96
50) 4-Methyl-2-Pentanone	7.392	43	1422136	114.13	ppb		98
52) Toluene	7.559	91	7043082	110.63	ppb		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728683.D
Acq On : 18 Sep 2018 2:08 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL8
Misc : QBV7091818A
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 18 14:41:13 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:57:06 2018
Response via : Initial Calibration

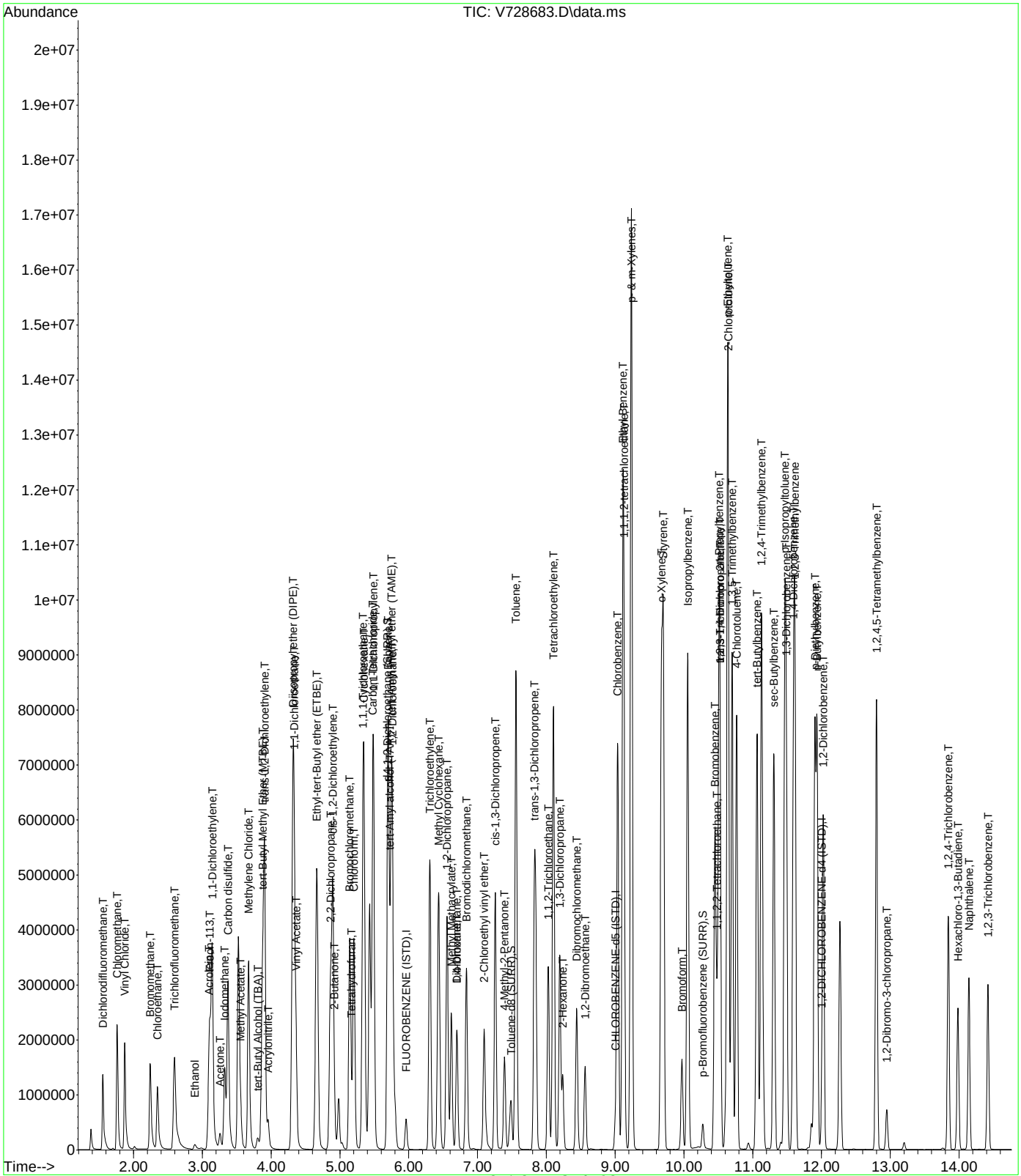
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.826	75	2359256	122.39	ppb		99
54) 1,1,2-Trichloroethane	8.029	97	1203476	116.09	ppb		97
55) 1,3-Dichloropropane	8.196	76	2134802	118.12	ppb	#	100
56) Tetrachloroethylene	8.104	166	2692841	149.72	ppb	#	100
57) 2-Hexanone	8.238	43	1037456	129.55	ppb		98
58) Dibromochloromethane	8.441	129	1554454	129.59	ppb		98
59) 1,2-Dibromoethane	8.563	107	1203781	127.82	ppb		98
60) Chlorobenzene	9.036	112	4560097	116.59	ppb		97
61) 1,1,1,2-tetrachloroethane	9.128	131	1684926	124.85	ppb		99
62) Ethyl Benzene	9.114	91	7714522	112.65	ppb		95
63) p- & m-Xylenes	9.236	91	11416154	183.32	ppb		95
64) o-Xylene	9.673	91	6063285	114.77	ppb		99
65) Styrene	9.701	104	4920057	122.89	ppb	#	100
66) Bromoform	9.971	173	938464	141.89	ppb	#	99
68) p-Ethyltoluene	10.636	105	6658495	112.79	ppb	#	99
69) Isopropylbenzene	10.054	105	7137031	111.97	ppb		98
71) 1,1,2,2-Tetrachloroethane	10.477	83	1354182	120.58	ppb	#	68
72) Bromobenzene	10.449	77	2849422	122.57	ppb		94
73) trans-1,4-Dichloro-2-b...	10.527	75	1602859	130.63	ppb		88
74) 1,2,3-Trichloropropane	10.527	110	377269	119.12	ppb		96
75) n-Propylbenzene	10.511	91	8109737	107.48	ppb		97
76) 2-Chlorotoluene	10.644	91	5747760	112.21	ppb		99
77) 4-Chlorotoluene	10.767	91	5307430	114.05	ppb		98
78) 1,3,5-Trimethylbenzene	10.700	105	5859544	115.46	ppb		99
79) tert-Butylbenzene	11.064	119	4817522	115.97	ppb		98
80) 1,2,4-Trimethylbenzene	11.128	105	5933106	119.18	ppb		99
81) sec-Butylbenzene	11.306	105	6241562	112.03	ppb		99
82) 1,3-Dichlorobenzene	11.490	146	3312653	123.41	ppb		100
83) p-Isopropyltoluene	11.468	119	5966477	116.13	ppb		99
84) 1,4-Dichlorobenzene	11.593	146	3335939	125.57	ppb		99
85) 1,2,3-Trimethylbenzene	11.615	105	5760147	121.44	ppb		98
86) p-Diethylbenzene	11.905	105	3082852	120.77	ppb		94
87) 1,2-Dichlorobenzene	12.024	146	2987960	124.47	ppb	#	100
88) n-Butylbenzene	11.935	91	5365104m	97.81	ppb		
89) 1,2-Dibromo-3-chloropr...	12.948	75	213781	135.68	ppb		90
90) 1,2,4,5-Tetramethylben...	12.800	119	5225808	130.46	ppb		99
91) 1,2,4-Trichlorobenzene	13.844	180	1605871	148.66	ppb		98
92) Hexachloro-1,3-Butadiene	13.983	225	643333	137.35	ppb		97
93) Naphthalene	14.144	128	2919736	160.66	ppb		99
94) 1,2,3-Trichlorobenzene	14.420	180	1107859	163.46	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728683.D
Acq On : 18 Sep 2018 2:08 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL8
Misc : QBV7091818A
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Sep 18 14:41:13 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:57:06 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728684.D
Acq On : 18 Sep 2018 2:40 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL9
Misc : QBV7091818A
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 18 15:03:20 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:57:06 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.962	70	107748m	10.00	ppb		0.13
40) CHLOROBENZENE-d5 (ISTD)	9.005	117	369600	10.00	ppb		0.14
67) 1,2-DICHLOROBENZENE-d4...	12.005	152	138653	10.00	ppb		0.16
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.689	65	119290m	9.07	ppb		0.14
Spiked Amount 10.000	Range 70 - 130		Recovery =	90.70%			
51) Toluene-d8 (SURR)	7.492	98	510757	10.70	ppb		0.13
Spiked Amount 10.000	Range 70 - 130		Recovery =	107.00%			
70) p-Bromofluorobenzene (...	10.277	95	173228	9.68	ppb		0.15
Spiked Amount 10.000	Range 70 - 130		Recovery =	96.80%			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.552	85	1469453	133.90	ppb		100
3) Chloromethane	1.760	50	3006610	192.93	ppb		99
4) Vinyl Chloride	1.872	62	2399655	187.95	ppb		100
5) Bromomethane	2.242	94	1540866	434.42	ppb		99
6) Chloroethane	2.347	64	1460516	197.89	ppb		100
7) Trichlorofluoromethane	2.595	101	2439191	142.69	ppb		100
8) Ethanol	2.890	45	159699	5983.28	ppb	#	52
9) Freon-113	3.107	101	1505809	107.44	ppb		97
10) 1,1-Dichloroethylene	3.143	61	3276716	121.00	ppb		94
11) Acrolein	3.096	56	160746	109.18	ppb		96
12) Acetone	3.257	43	439341	134.30	ppb	#	100
13) Iodomethane	3.324	142	2599148	646.30	ppb		100
14) Methyl Acetate	3.555	43	1184296	134.30	ppb		99
15) Carbon disulfide	3.371	76	6075069	131.70	ppb		100
16) tert-Butyl Alcohol (TBA)	3.805	59	364269m	326.52	ppb		
17) Methylene Chloride	3.672	49	3156359	122.40	ppb		91
18) Acrylonitrile	3.956	53	494742m	135.35	ppb		
19) trans-1,2-Dichloroethy...	3.906	61	3476657	127.94	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	5754193	135.59	ppb		100
21) 1,1-Dichloroethane	4.334	63	4265095	124.50	ppb		99
22) Vinyl Acetate	4.362	43	4381356m	91.81	ppb		
23) Diisopropyl ether (DIPE)	4.317	45	8315793m	117.34	ppb		
24) Ethyl-tert-Butyl ether...	4.662	59	7610672m	125.54	ppb		
25) cis-1,2-Dichloroethylene	4.896	61	3924557	126.41	ppb		96
26) 2-Butanone	4.918	72	171851m	130.70	ppb		
27) 2,2-Dichloropropane	4.865	77	3069542	125.36	ppb	#	100
28) Tetrahydrofuran	5.166	71	175453m	141.40	ppb		
29) Bromochloromethane	5.141	49	1810085	111.05	ppb		92
30) Chloroform	5.202	83	3969801m	133.61	ppb		
31) 1,1,1-Trichloroethane	5.336	97	3419567	125.58	ppb	#	100
32) Cyclohexane	5.350	56	3086859	95.17	ppb		94
33) 1,1-Dichloropropylene	5.489	75	3061413m	130.42	ppb		
35) Carbon Tetrachloride	5.478	117	2884826m	122.93	ppb		
36) tert-Amyl alcohol (TAA)	5.725	59	1535527m	1349.09	ppb		
37) 1,2-Dichloroethane	5.761	62	2608435	125.88	ppb		99
38) Benzene	5.700	78	8743637	127.91	ppb	#	70
39) tert-Amyl methyl ether...	5.750	73	7133340m	154.22	ppb		
41) Trichloroethylene	6.307	95	2460332	153.94	ppb		95
42) Methyl Cyclohexane	6.435	83	2541022	114.71	ppb		91
43) Methyl Methacrylate	6.621	69	1262475	162.74	ppb	#	26
44) Dibromomethane	6.702	93	1167324	152.94	ppb		95
45) Bromodichloromethane	6.838	83	3033476	158.55	ppb		98
46) 1,2-Dichloropropane	6.557	63	2443918	147.09	ppb		99
47) 1,4-Dioxane	6.699	88	46366	3042.94	ppb		98
48) 2-Chloroethyl vinyl ether	7.097	63	1090397	207.32	ppb		99
49) cis-1,3-Dichloropropene	7.258	75	3643010	161.40	ppb		95
50) 4-Methyl-2-Pentanone	7.394	43	1881928	150.74	ppb		98
52) Toluene	7.561	91	9096112	142.61	ppb		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728684.D
Acq On : 18 Sep 2018 2:40 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL9
Misc : QBV7091818A
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 18 15:03:20 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:57:06 2018
Response via : Initial Calibration

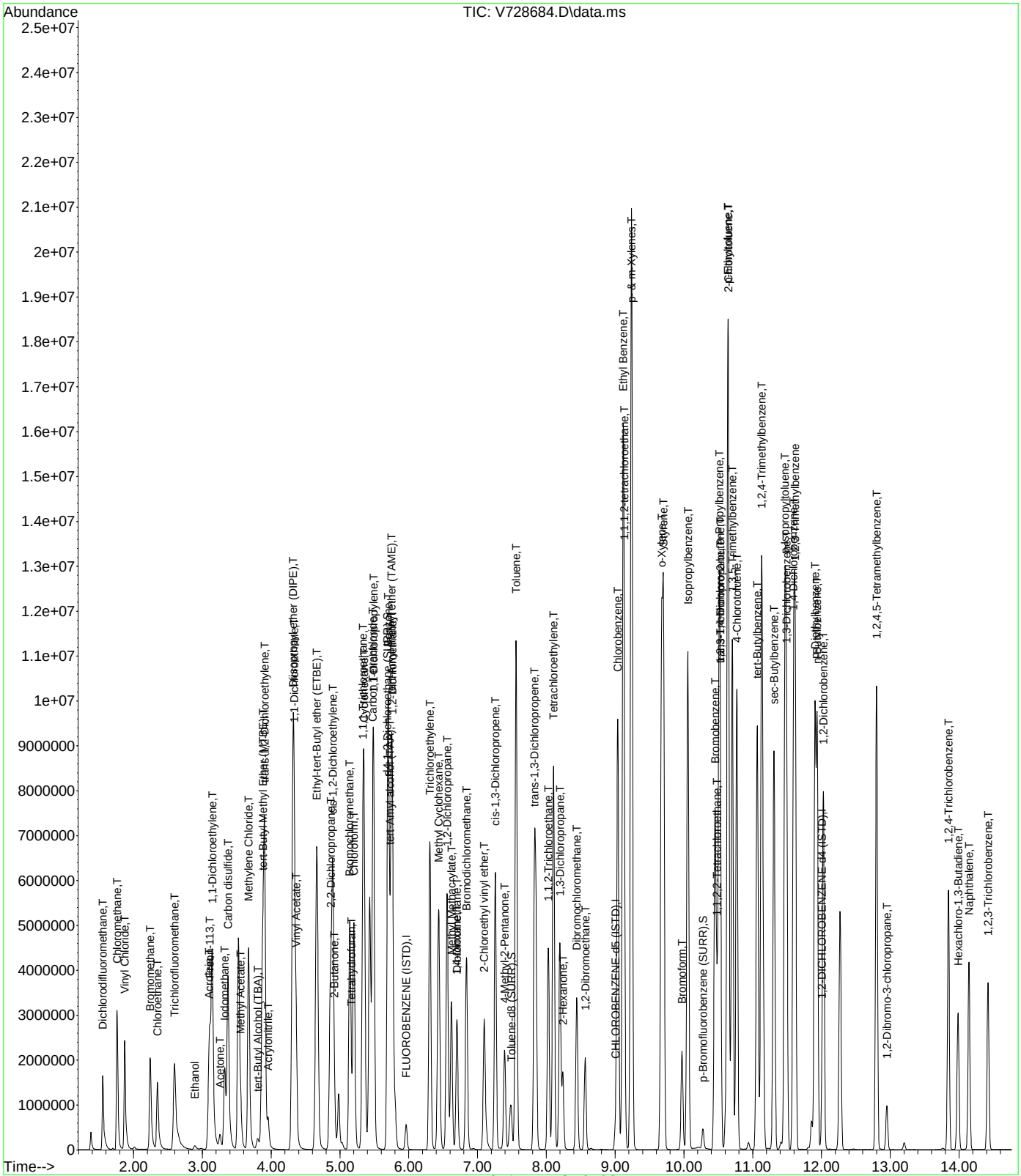
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.826	75	3138822	162.53	ppb		99
54) 1,1,2-Trichloroethane	8.029	97	1602671	154.31	ppb		97
55) 1,3-Dichloropropane	8.199	76	2847979	157.28	ppb	#	86
56) Tetrachloroethylene	8.104	166	2878455	159.74	ppb	#	100
57) 2-Hexanone	8.240	43	1334032	166.27	ppb		96
58) Dibromochloromethane	8.443	129	2080774	173.15	ppb		98
59) 1,2-Dibromoethane	8.566	107	1620081	171.70	ppb		98
60) Chlorobenzene	9.039	112	5999642	153.10	ppb		97
61) 1,1,1,2-tetrachloroethane	9.131	131	2179549	161.20	ppb		99
62) Ethyl Benzene	9.117	91	9857764	143.67	ppb		95
63) p- & m-Xylenes	9.239	91	14194360	227.50	ppb		94
64) o-Xylene	9.676	91	7794242	147.26	ppb		99
65) Styrene	9.704	104	6279575	156.55	ppb	#	100
66) Bromoform	9.971	173	1249049	188.50	ppb	#	99
68) p-Ethyltoluene	10.639	105	8429966	142.13	ppb	#	99
69) Isopropylbenzene	10.057	105	8961119	139.93	ppb		97
71) 1,1,2,2-Tetrachloroethane	10.480	83	1826317	161.86	ppb	#	68
72) Bromobenzene	10.452	77	3758652	160.93	ppb		94
73) trans-1,4-Dichloro-2-b...	10.530	75	2100008	170.36	ppb		86
74) 1,2,3-Trichloropropane	10.530	110	494979	155.56	ppb		95
75) n-Propylbenzene	10.513	91	10158606	134.01	ppb		97
76) 2-Chlorotoluene	10.644	91	7375897	143.32	ppb		99
77) 4-Chlorotoluene	10.769	91	6783641	145.09	ppb		98
78) 1,3,5-Trimethylbenzene	10.703	105	7440841	145.94	ppb		98
79) tert-Butylbenzene	11.067	119	6065746	145.34	ppb		98
80) 1,2,4-Trimethylbenzene	11.131	105	7653515	153.02	ppb		99
81) sec-Butylbenzene	11.309	105	7711628	137.78	ppb		98
82) 1,3-Dichlorobenzene	11.493	146	4244246	157.38	ppb		99
83) p-Isopropyltoluene	11.468	119	7426715	143.88	ppb		99
84) 1,4-Dichlorobenzene	11.593	146	4287186	160.62	ppb		99
85) 1,2,3-Trimethylbenzene	11.618	105	7398474	155.26	ppb		98
86) p-Diethylbenzene	11.904	105	3898122	152.00	ppb		92
87) 1,2-Dichlorobenzene	12.027	146	3905458	161.93	ppb	#	100
88) n-Butylbenzene	11.935	91	6565398m	119.13	ppb		
89) 1,2-Dibromo-3-chloropr...	12.951	75	283762	179.26	ppb		89
90) 1,2,4,5-Tetramethylben...	12.800	119	6767298	168.15	ppb		99
91) 1,2,4-Trichlorobenzene	13.846	180	2103169	193.79	ppb		98
92) Hexachloro-1,3-Butadiene	13.986	225	783664	166.54	ppb		98
93) Naphthalene	14.144	128	3823881	209.43	ppb		99
94) 1,2,3-Trichlorobenzene	14.420	180	1427472	209.64	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728684.D
Acq On : 18 Sep 2018 2:40 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-CAL9
Misc : QBV7091818A
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 18 15:03:20 2018
Quant Method : C:\msdchem\1\methods\V7LO0119.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 13:57:06 2018
Response via : Initial Calibration



SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. **SDG:** 18J1263

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170264501

Calibration: YI80021 **Laboratory ID:** Y8I1906-SCV1

Sequence: Y8I1906 **Standard ID:** Y18I004

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DIFF	QC LIMIT
1,1,1-Trichloroethane	10.0	9.66	-3.4	30.00
1,1-Dichloroethane	10.0	9.58	-4.2	30.00
1,1-Dichloroethylene	10.0	9.36	-6.4	30.00
1,2,4-Trimethylbenzene	10.0	9.69	-3.1	30.00
1,2-Dichlorobenzene	10.0	9.66	-3.4	30.00
1,2-Dichloroethane	10.0	9.57	-4.3	30.00
1,3,5-Trimethylbenzene	10.0	9.82	-1.8	30.00
1,3-Dichlorobenzene	10.0	9.64	-3.6	30.00
1,4-Dichlorobenzene	10.0	9.49	-5.1	30.00
1,4-Dioxane	210	251	19.5	30.00
2-Butanone	10.0	11.1	10.9	30.00
Acetone	10.0	9.74	-2.6	30.00
Benzene	10.0	9.82	-1.8	30.00
Carbon tetrachloride	10.0	9.84	-1.6	30.00
Chlorobenzene	10.0	9.51	-4.9	30.00
Chloroform	10.0	9.45	-5.5	30.00
cis-1,2-Dichloroethylene	10.0	9.34	-6.6	30.00
Ethyl Benzene	10.0	9.76	-2.4	30.00
Methyl tert-butyl ether (MTBE)	10.0	9.68	-3.2	30.00
Methylene chloride	10.0	9.04	-9.6	30.00
Naphthalene	10.0	9.80	-2.0	30.00
n-Butylbenzene	10.0	10.5	5.0	30.00
n-Propylbenzene	10.0	9.86	-1.4	30.00
o-Xylene	10.0	9.73	-2.7	30.00
p- & m- Xylenes	20.0	16.5	-17.6	30.00
sec-Butylbenzene	10.0	10.4	3.6	30.00
tert-Butylbenzene	10.0	9.93	-0.7	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260C

Laboratory: York Analytical Laboratories, Inc. **SDG:** 18J1263

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170264501

Calibration: YI80021 **Laboratory ID:** Y8I1906-SCV1

Sequence: Y8I1906 **Standard ID:** Y18I004

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DIFF	QC LIMIT
Tetrachloroethylene	10.0	7.22	-27.8	30.00
Toluene	10.0	9.83	-1.7	30.00
trans-1,2-Dichloroethylene	10.0	9.39	-6.1	30.00
Trichloroethylene	10.0	9.48	-5.2	30.00
Vinyl Chloride	10.0	9.88	-1.2	30.00

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728686.D
Acq On : 18 Sep 2018 3:43 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-SCV1
Misc : QBV7091818A
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 19 09:49:53 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	99820	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.005	117	353493	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.999	152	128603	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.686	65	108361	9.93	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.30%				
51) Toluene-d8 (SURR)	7.489	98	481169	9.95	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 99.50%				
70) p-Bromofluorobenzene (...	10.274	95	166292	10.09	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	125023	11.86	ppb		100
3) Chloromethane	1.763	50	166031	9.76	ppb		99
4) Vinyl Chloride	1.872	62	147078	9.88	ppb		100
5) Bromomethane	2.242	94	79172	8.95	ppb		100
6) Chloroethane	2.348	64	80232	9.24	ppb		100
7) Trichlorofluoromethane	2.592	101	169946	9.84	ppb		100
9) Freon-113	3.104	101	119676	10.41	ppb		97
10) 1,1-Dichloroethylene	3.141	61	192971	9.36	ppb		88
11) Acrolein	3.096	56	8872	8.86	ppb		95
12) Acetone	3.257	43	34207	9.74	ppb	#	100
13) Iodomethane	3.324	142	172899	10.29	ppb		99
14) Methyl Acetate	3.555	43	66588	9.60	ppb		99
15) Carbon disulfide	3.371	76	376921	10.04	ppb		100
16) tert-Butyl Alcohol (TBA)	3.805	59	34943	49.09	ppb	#	100
17) Methylene Chloride	3.672	49	181926	9.04	ppb		92
18) Acrylonitrile	3.958	53	26422	9.83	ppb	#	67
19) trans-1,2-Dichloroethy...	3.906	61	193052	9.39	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	324657	9.68	ppb		99
21) 1,1-Dichloroethane	4.334	63	243551	9.58	ppb		100
22) Vinyl Acetate	4.362	43	389550	15.01	ppb	#	100
23) Diisopropyl ether (DIPE)	4.315	45	500726	9.94	ppb		99
24) Ethyl-tert-Butyl ether...	4.662	59	434192	9.58	ppb	#	99
25) cis-1,2-Dichloroethylene	4.896	61	216194	9.34	ppb		96
26) 2-Butanone	4.918	72	11615	11.09	ppb	#	100
27) 2,2-Dichloropropane	4.863	77	177347	8.93	ppb	#	100
28) Tetrahydrofuran	5.166	71	9336	9.29	ppb	#	1
29) Bromochloromethane	5.138	49	111200	9.78	ppb		93
30) Chloroform	5.202	83	219481	9.45	ppb	#	100
31) 1,1,1-Trichloroethane	5.336	97	203929	9.66	ppb	#	67
32) Cyclohexane	5.347	56	249599	10.57	ppb		94
33) 1,1-Dichloropropylene	5.483	75	180672	9.47	ppb		97
35) Carbon Tetrachloride	5.475	117	183512	9.84	ppb		99
36) tert-Amyl alcohol (TAA)	5.725	59	87567	97.52	ppb	#	78
37) 1,2-Dichloroethane	5.759	62	147983	9.57	ppb		99
38) Benzene	5.697	78	524259	9.82	ppb	#	76
39) tert-Amyl methyl ether...	5.747	73	408197	9.71	ppb	#	99
41) Trichloroethylene	6.304	95	142186	9.48	ppb		94
42) Methyl Cyclohexane	6.432	83	209591	10.30	ppb		91
43) Methyl Methacrylate	6.618	69	69772	9.66	ppb	#	26
44) Dibromomethane	6.699	93	61583	9.19	ppb		94
45) Bromodichloromethane	6.838	83	166098	9.51	ppb		98
46) 1,2-Dichloropropane	6.554	63	132077	9.29	ppb		99
47) 1,4-Dioxane	6.696	88	3302	251.04	ppb		97
48) 2-Chloroethyl vinyl ether	7.094	63	63679	10.06	ppb		99
49) cis-1,3-Dichloropropene	7.255	75	197465	9.22	ppb		97
50) 4-Methyl-2-Pentanone	7.389	43	108997	9.62	ppb		98
52) Toluene	7.556	91	566542	9.83	ppb		100
53) trans-1,3-Dichloropropene	7.823	75	169937	8.97	ppb		99

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728686.D
Acq On : 18 Sep 2018 3:43 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-SCV1
Misc : QBV7091818A
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 19 09:49:53 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

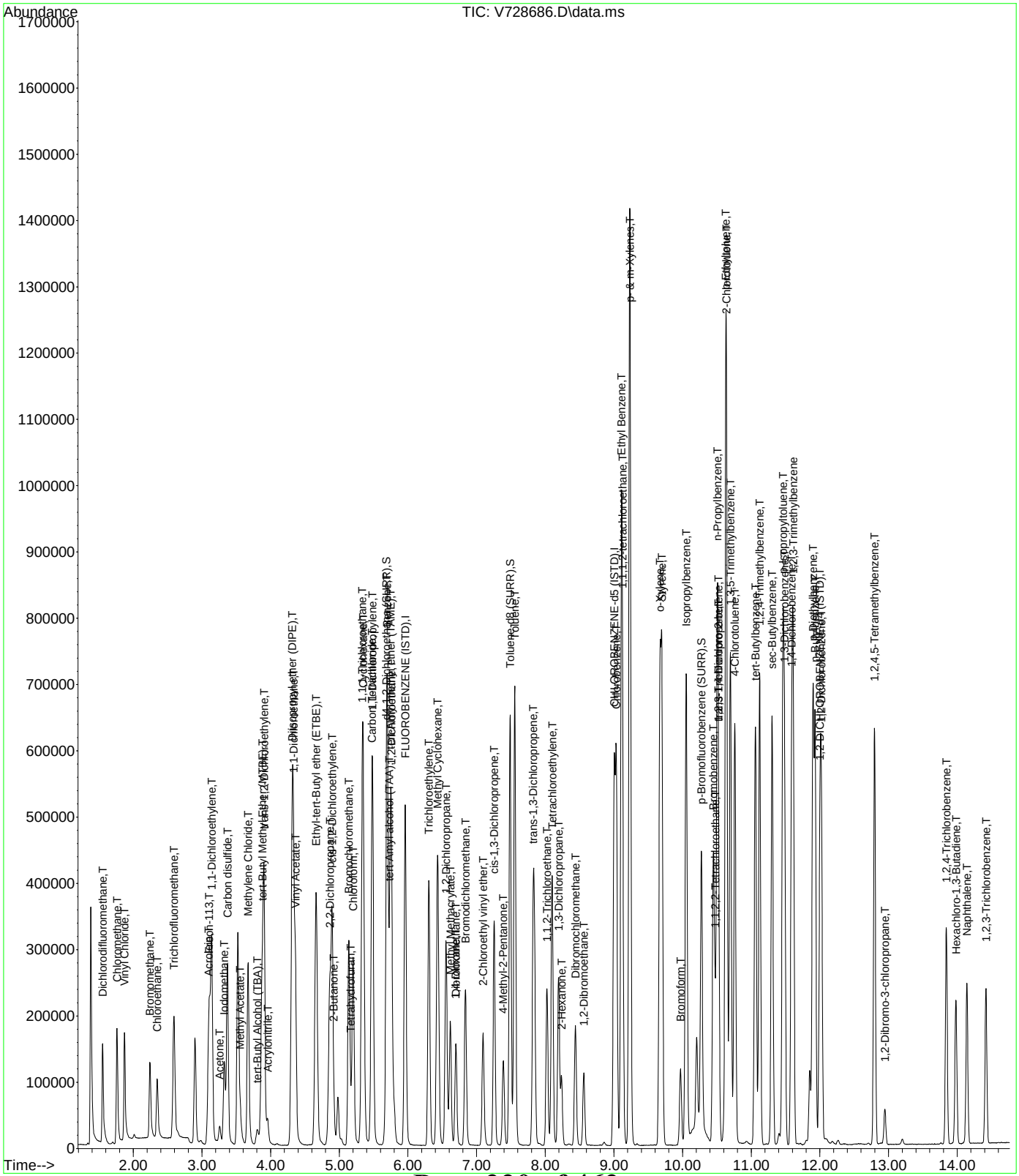
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
54) 1,1,2-Trichloroethane	8.026	97	87474	9.19	ppb		97
55) 1,3-Dichloropropane	8.196	76	155874	9.39	ppb	#	100
56) Tetrachloroethylene	8.101	166	140545	7.22	ppb	#	100
57) 2-Hexanone	8.238	43	80985	9.81	ppb		99
58) Dibromochloromethane	8.441	129	112713	9.37	ppb		99
59) 1,2-Dibromoethane	8.560	107	87510	9.33	ppb		99
60) Chlorobenzene	9.036	112	348552	9.51	ppb		98
61) 1,1,1,2-tetrachloroethane	9.125	131	129972	9.69	ppb		100
62) Ethyl Benzene	9.111	91	623689	9.76	ppb		98
63) p- & m-Xylenes	9.231	91	966739	16.47	ppb		97
64) o-Xylene	9.670	91	483313	9.73	ppb		99
65) Styrene	9.698	104	384724	9.60	ppb	#	100
66) Bromoform	9.971	173	65464	9.14	ppb	#	99
68) p-Ethyltoluene	10.630	105	577612	10.03	ppb	#	87
69) Isopropylbenzene	10.052	105	586006	9.72	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.475	83	99908	9.46	ppb	#	99
72) Bromobenzene	10.447	77	216378	9.58	ppb		94
73) trans-1,4-Dichloro-2-b...	10.525	75	116703	9.35	ppb		93
74) 1,2,3-Trichloropropane	10.525	110	28789	9.46	ppb		94
75) n-Propylbenzene	10.508	91	683685	9.86	ppb		99
76) 2-Chlorotoluene	10.639	91	464304	9.77	ppb		99
77) 4-Chlorotoluene	10.761	91	420494	9.68	ppb		99
78) 1,3,5-Trimethylbenzene	10.697	105	485264	9.82	ppb		99
79) tert-Butylbenzene	11.062	119	403631	9.93	ppb		97
80) 1,2,4-Trimethylbenzene	11.123	105	472981	9.69	ppb		100
81) sec-Butylbenzene	11.304	105	556583	10.36	ppb		99
82) 1,3-Dichlorobenzene	11.484	146	257161	9.64	ppb		98
83) p-Isopropyltoluene	11.462	119	502627	10.02	ppb		98
84) 1,4-Dichlorobenzene	11.587	146	254321	9.49	ppb		98
85) 1,2,3-Trimethylbenzene	11.610	105	470066	9.93	ppb		99
86) p-Diethylbenzene	11.899	105	265344	10.41	ppb		91
87) 1,2-Dichlorobenzene	12.021	146	226761	9.66	ppb	#	100
88) n-Butylbenzene	11.930	91	501015	10.50	ppb		96
89) 1,2-Dibromo-3-chloropr...	12.948	75	15490	9.18	ppb	#	60
90) 1,2,4,5-Tetramethylben...	12.795	119	409747	9.67	ppb		99
91) 1,2,4-Trichlorobenzene	13.844	180	120055	9.58	ppb		98
92) Hexachloro-1,3-Butadiene	13.983	225	54631	10.15	ppb		98
93) Naphthalene	14.142	128	221723	9.80	ppb		100
94) 1,2,3-Trichlorobenzene	14.420	180	84846	9.77	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7091818\
Data File : V728686.D
Acq On : 18 Sep 2018 3:43 pm
InstName : MSVOA7
Operator : SS
Sample : SEQ-SCV1
Misc : QBV7091818A
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Sep 19 09:49:53 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



FORM VII

CONTINUING CALIBRATION CHECK

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC	Project:	170264501
Instrument ID:	MSVOA7	Calibration:	YI80021
Lab File ID:	V729628.D	Calibration Date:	09/19/18 10:05
Sequence:	Y8K0116	Injection Date:	10/31/18
Lab Sample ID:	Y8K0116-CCV1	Injection Time:	10:13

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
1,1,1-Trichloroethane	A	10.0	11.9	2.11467	2.5078	0.1	18.6	20	
1,1-Dichloroethane	A	10.0	10.9	2.546154	2.769955	0.2	8.8	20	
1,1-Dichloroethylene	A	10.0	10.7	2.064783	2.217307	0.1	7.4	20	
1,2,4-Trimethylbenzene	A	10.0	10.2	3.795197	3.886024		2.4	20	
1,2-Dichlorobenzene	A	10.0	10.1	1.825209	1.84162	0.4	0.9	20	
1,2-Dichloroethane	A	10.0	11.9	1.549667	1.840372	0.1	18.8	20	
1,3,5-Trimethylbenzene	A	10.0	10.1	3.84147	3.895429		1.4	20	
1,3-Dichlorobenzene	A	10.0	10.4	2.075088	2.150385	0.6	3.6	20	
1,4-Dichlorobenzene	A	10.0	10.2	2.08336	2.121832	0.5	1.8	20	
1,4-Dioxane	A	200	265	3.752608E-04	4.926587E-04		31.3	20	*
2-Butanone	A	10.0	15.0	0.1049067	0.1569039	0.1	49.6	20	*
Acetone	A	10.0	12.6	0.3518049	0.4436987	0.1	26.1	20	*
Benzene	A	10.0	11.4	5.346187	6.099225	0.5	14.1	20	
Carbon tetrachloride	A	10.0	11.7	1.868283	2.192394	0.1	17.3	20	
Chlorobenzene	A	10.0	10.4	1.037128	1.079392	0.5	4.1	20	
Chloroform	A	10.0	11.6	2.327871	2.695095	0.2	15.8	20	
cis-1,2-Dichloroethylene	A	10.0	10.7	2.319893	2.484713	0.1	7.1	20	
Ethyl Benzene	A	10.0	10.8	1.807764	1.962152	0.1	8.5	20	
Methyl tert-butyl ether (MTBE)	A	10.0	11.1	3.361038	3.733872	0.1	11.1	20	
Methylene chloride	A	10.0	9.27	2.016882	1.869135	0.1	-7.3	20	
Naphthalene	A	10.0	7.98	1.759783	1.404924		-20.2	20	*
n-Butylbenzene	A	10.0	9.35	3.711021	3.47094		-6.5	20	
n-Propylbenzene	A	10.0	10.4	5.392045	5.613837		4.1	20	
o-Xylene	A	10.0	10.7	1.405315	1.500551	0.3	6.8	20	
p- & m- Xylenes	A	20.0	18.7	1.3838	1.554222	0.1	12.3	20	
sec-Butylbenzene	A	10.0	10.3	4.176868	4.318687		3.4	20	
tert-Butylbenzene	A	10.0	9.86	3.159846	3.114671		-1.4	20	
Tetrachloroethylene	A	10.0	8.77	0.5510011	0.4832373	0.2	-12.3	20	
Toluene	A	10.0	10.7	1.630934	1.75039	0.4	7.3	20	

FORM VII

CONTINUING CALIBRATION CHECK

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC	Project:	170264501
Instrument ID:	MSVOA7	Calibration:	YI80021
Lab File ID:	V729628.D	Calibration Date:	09/19/18 10:05
Sequence:	Y8K0116	Injection Date:	10/31/18
Lab Sample ID:	Y8K0116-CCV1	Injection Time:	10:13

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
trans-1,2-Dichloroethylene	A	10.0	10.6	2.059738	2.173386	0.1	5.5	20
Trichloroethylene	A	10.0	9.92	0.4242284	0.4206952	0.2	-0.8	20
Vinyl Chloride	A	10.0	11.9	1.49108	1.777473	0.1	19.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729628.D
Acq On : 31 Oct 2018 10:13 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CCV1
Misc : QBV7103118A
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 31 11:36:49 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.956	70	65709	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	252406	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	100688	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	77497	10.79	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 107.90%				
51) Toluene-d8 (SURR)	7.483	98	328612	9.52	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.20%				
70) p-Bromofluorobenzene (...	10.268	95	120042	9.30	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 93.00%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.554	85	94835	13.66	ppb		100
3) Chloromethane	1.763	50	90457	8.08	ppb		98
4) Vinyl Chloride	1.872	62	116796	11.92	ppb		100
5) Bromomethane	2.239	94	22334	3.83	ppb		100
6) Chloroethane	2.345	64	77730	13.60	ppb		99
7) Trichlorofluoromethane	2.589	101	177979	15.66	ppb		100
8) Ethanol	2.893	45	10884	978.88	ppb	#	52
9) Freon-113	3.104	101	86883	11.48	ppb		99
10) 1,1-Dichloroethylene	3.140	61	145697	10.74	ppb		90
11) Acrolein	3.096	56	10785	16.36	ppb		95
12) Acetone	3.254	43	29155	12.61	ppb	#	100
13) Iodomethane	3.318	142	27345	2.47	ppb		99
14) Methyl Acetate	3.552	43	43905	9.62	ppb		98
15) Carbon disulfide	3.368	76	256403	10.38	ppb		100
16) tert-Butyl Alcohol (TBA)	3.802	59	29386	62.71	ppb	#	100
17) Methylene Chloride	3.669	49	122819	9.27	ppb		86
18) Acrylonitrile	3.953	53	16965	9.59	ppb	#	77
19) trans-1,2-Dichloroethy...	3.903	61	142811	10.55	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.875	73	245349	11.11	ppb		98
21) 1,1-Dichloroethane	4.331	63	182011	10.88	ppb		99
22) Vinyl Acetate	4.356	43	129221	7.56	ppb	#	100
23) Diisopropyl ether (DIPE)	4.312	45	310488	9.37	ppb		97
24) Ethyl-tert-Butyl ether...	4.659	59	306588	10.27	ppb	#	97
25) cis-1,2-Dichloroethylene	4.890	61	163268	10.71	ppb		95
26) 2-Butanone	4.915	72	10310	14.96	ppb	#	100
27) 2,2-Dichloropropane	4.860	77	152432	11.66	ppb	#	100
28) Tetrahydrofuran	5.163	71	7340	11.10	ppb	#	71
29) Bromochloromethane	5.135	49	76379	10.21	ppb		88
30) Chloroform	5.199	83	177092	11.58	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	164785	11.86	ppb	#	100
32) Cyclohexane	5.344	56	161022	10.36	ppb		89
33) 1,1-Dichloropropylene	5.480	75	142506	11.34	ppb		96
35) Carbon Tetrachloride	5.475	117	144060	11.73	ppb		100
36) tert-Amyl alcohol (TAA)	5.717	59	65189	110.28	ppb	#	78
37) 1,2-Dichloroethane	5.756	62	120929	11.88	ppb		99
38) Benzene	5.694	78	400774	11.41	ppb	#	75
39) tert-Amyl methyl ether...	5.744	73	311731	11.27	ppb	#	99
41) Trichloroethylene	6.301	95	106186	9.92	ppb		98
42) Methyl Cyclohexane	6.429	83	151583	10.44	ppb		88
43) Methyl Methacrylate	6.613	69	50918	9.87	ppb	#	26
44) Dibromomethane	6.693	93	51592	10.78	ppb		98
45) Bromodichloromethane	6.835	83	127757	10.25	ppb		98
46) 1,2-Dichloropropane	6.551	63	96873	9.54	ppb		98
47) 1,4-Dioxane	6.688	88	2487	264.81	ppb		99
48) 2-Chloroethyl vinyl ether	7.091	63	27010	5.97	ppb		99
49) cis-1,3-Dichloropropene	7.252	75	151938	9.93	ppb		96
50) 4-Methyl-2-Pentanone	7.383	43	68022	8.41	ppb		95
52) Toluene	7.553	91	441809	10.73	ppb		100

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729628.D
Acq On : 31 Oct 2018 10:13 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CCV1
Misc : QBV7103118A
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 31 11:36:49 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

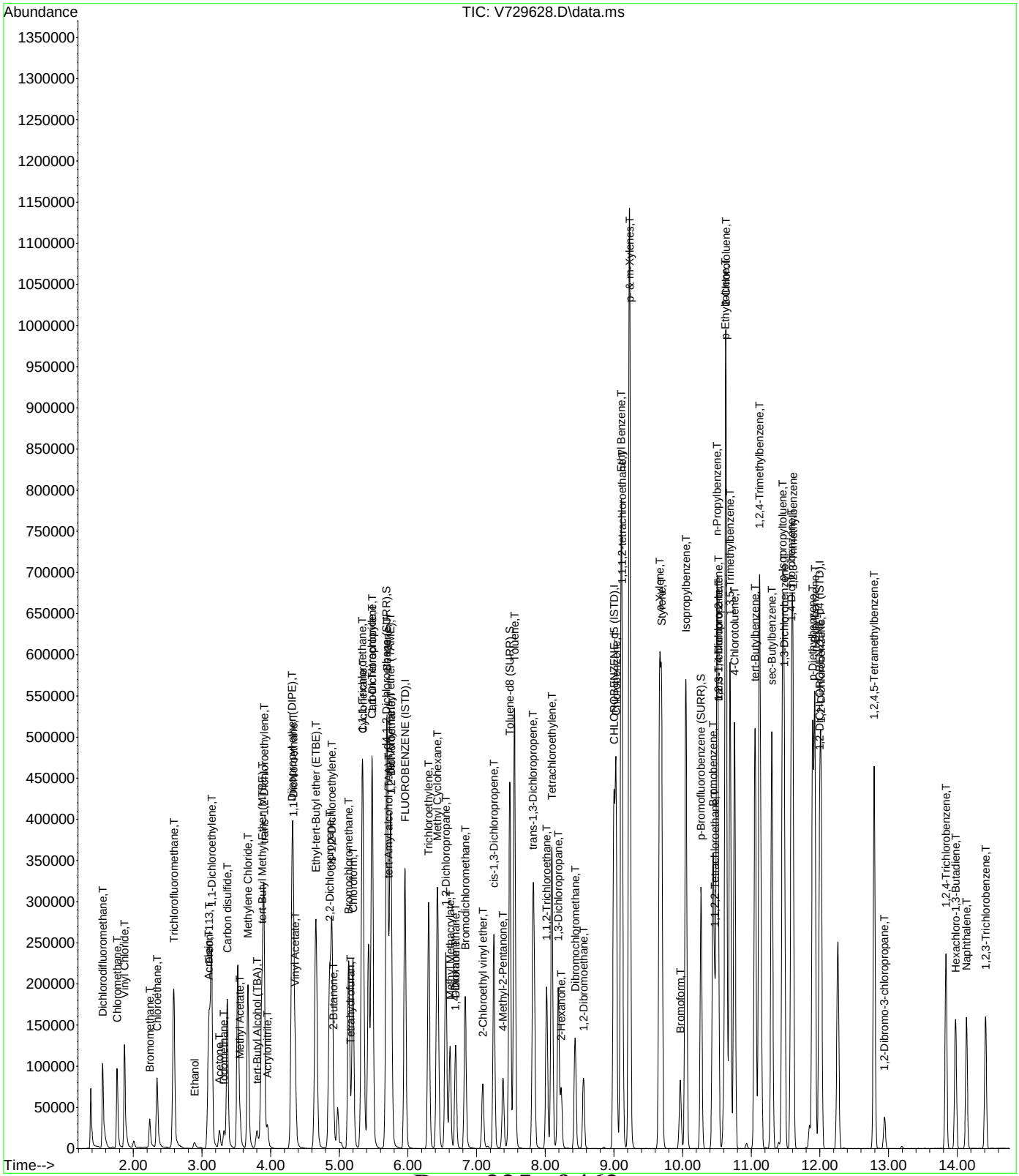
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.820	75	133088	9.84	ppb		100
54) 1,1,2-Trichloroethane	8.020	97	70411	10.36	ppb		99
55) 1,3-Dichloropropane	8.190	76	121359	10.24	ppb	#	100
56) Tetrachloroethylene	8.095	166	121972	8.77	ppb	#	100
57) 2-Hexanone	8.232	43	54823	9.30	ppb		99
58) Dibromochloromethane	8.435	129	81898	9.54	ppb		99
59) 1,2-Dibromoethane	8.557	107	66018	9.85	ppb		99
60) Chlorobenzene	9.030	112	272445	10.41	ppb		98
61) 1,1,1,2-tetrachloroethane	9.119	131	97933	10.23	ppb		100
62) Ethyl Benzene	9.105	91	495259	10.85	ppb		100
63) p- & m-Xylenes	9.228	91	784590	18.72	ppb		99
64) o-Xylene	9.667	91	378748	10.68	ppb		100
65) Styrene	9.692	104	298009	10.41	ppb	#	100
66) Bromoform	9.968	173	45937	8.98	ppb	#	99
68) p-Ethyltoluene	10.625	105	453709	10.07	ppb	#	87
69) Isopropylbenzene	10.049	105	465623	9.86	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.469	83	81539	9.86	ppb	#	100
72) Bromobenzene	10.444	77	170375	9.64	ppb		95
73) trans-1,4-Dichloro-2-b...	10.519	75	91215	9.33	ppb		93
74) 1,2,3-Trichloropropane	10.519	110	23925	10.04	ppb		92
75) n-Propylbenzene	10.502	91	565246	10.41	ppb		100
76) 2-Chlorotoluene	10.633	91	386034	10.37	ppb		100
77) 4-Chlorotoluene	10.755	91	350972	10.32	ppb		100
78) 1,3,5-Trimethylbenzene	10.691	105	392223	10.14	ppb		99
79) tert-Butylbenzene	11.056	119	313610	9.86	ppb		100
80) 1,2,4-Trimethylbenzene	11.120	105	391276	10.24	ppb		98
81) sec-Butylbenzene	11.301	105	434840	10.34	ppb		100
82) 1,3-Dichlorobenzene	11.481	146	216518	10.36	ppb		99
83) p-Isopropyltoluene	11.456	119	398651	10.15	ppb		99
84) 1,4-Dichlorobenzene	11.584	146	213643	10.18	ppb		98
85) 1,2,3-Trimethylbenzene	11.607	105	376471	10.15	ppb		99
86) p-Diethylbenzene	11.893	105	200049	10.03	ppb		97
87) 1,2-Dichlorobenzene	12.018	146	185429	10.09	ppb	#	68
88) n-Butylbenzene	11.927	91	349482m	9.35	ppb		
89) 1,2-Dibromo-3-chloropr...	12.939	75	11477	8.69	ppb		98
90) 1,2,4,5-Tetramethylben...	12.789	119	299886	9.04	ppb		98
91) 1,2,4-Trichlorobenzene	13.838	180	84752	8.64	ppb		98
92) Hexachloro-1,3-Butadiene	13.977	225	37376	8.87	ppb		99
93) Naphthalene	14.136	128	141459	7.98	ppb		99
94) 1,2,3-Trichlorobenzene	14.414	180	56786	8.35	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729628.D
Acq On : 31 Oct 2018 10:13 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CCV1
Misc : QBV7103118A
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 31 11:36:49 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



FORM VII

CONTINUING CALIBRATION CHECK

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC	Project:	170264501
Instrument ID:	MSVOA7	Calibration:	YI80021
Lab File ID:	V729651.D	Calibration Date:	09/19/18 10:05
Sequence:	Y8K0121	Injection Date:	11/01/18
Lab Sample ID:	Y8K0121-CCV1	Injection Time:	10:12

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
1,1,1-Trichloroethane	A	10.0	11.6	2.11467	2.451723	0.1	15.9	20	
1,1-Dichloroethane	A	10.0	10.6	2.546154	2.697295	0.2	5.9	20	
1,1-Dichloroethylene	A	10.0	10.5	2.064783	2.162184	0.1	4.7	20	
1,2,4-Trimethylbenzene	A	10.0	9.95	3.795197	3.774511		-0.5	20	
1,2-Dichlorobenzene	A	10.0	9.79	1.825209	1.786532	0.4	-2.1	20	
1,2-Dichloroethane	A	10.0	11.5	1.549667	1.788555	0.1	15.4	20	
1,3,5-Trimethylbenzene	A	10.0	9.99	3.84147	3.836442		-0.1	20	
1,3-Dichlorobenzene	A	10.0	10.1	2.075088	2.100399	0.6	1.2	20	
1,4-Dichlorobenzene	A	10.0	9.99	2.08336	2.082278	0.5	-0.05	20	
1,4-Dioxane	A	200	346	3.752608E-04	6.440863E-04		71.6	20	*
2-Butanone	A	10.0	12.3	0.1049067	0.1287446	0.1	22.7	20	*
Acetone	A	10.0	8.91	0.3518049	0.3134352	0.1	-10.9	20	
Benzene	A	10.0	11.3	5.346187	6.054041	0.5	13.2	20	
Carbon tetrachloride	A	10.0	11.6	1.868283	2.159466	0.1	15.6	20	
Chlorobenzene	A	10.0	10.4	1.037128	1.076647	0.5	3.8	20	
Chloroform	A	10.0	11.4	2.327871	2.644473	0.2	13.6	20	
cis-1,2-Dichloroethylene	A	10.0	10.7	2.319893	2.484085	0.1	7.1	20	
Ethyl Benzene	A	10.0	10.9	1.807764	1.968134	0.1	8.9	20	
Methyl tert-butyl ether (MTBE)	A	10.0	11.0	3.361038	3.689454	0.1	9.8	20	
Methylene chloride	A	10.0	9.15	2.016882	1.845438	0.1	-8.5	20	
Naphthalene	A	10.0	7.43	1.759783	1.307688		-25.7	20	*
n-Butylbenzene	A	10.0	9.17	3.711021	3.402686		-8.3	20	
n-Propylbenzene	A	10.0	10.3	5.392045	5.553255		3.0	20	
o-Xylene	A	10.0	10.7	1.405315	1.507899	0.3	7.3	20	
p- & m- Xylenes	A	20.0	18.8	1.3838	1.562775	0.1	12.9	20	
sec-Butylbenzene	A	10.0	10.2	4.176868	4.239477		1.5	20	
tert-Butylbenzene	A	10.0	9.75	3.159846	3.079782		-2.5	20	
Tetrachloroethylene	A	10.0	8.17	0.5510011	0.4501271	0.2	-18.3	20	
Toluene	A	10.0	10.7	1.630934	1.747743	0.4	7.2	20	

FORM VII

CONTINUING CALIBRATION CHECK

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC	Project:	170264501
Instrument ID:	MSVOA7	Calibration:	YI80021
Lab File ID:	V729651.D	Calibration Date:	09/19/18 10:05
Sequence:	Y8K0121	Injection Date:	11/01/18
Lab Sample ID:	Y8K0121-CCV1	Injection Time:	10:12

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
trans-1,2-Dichloroethylene	A	10.0	10.4	2.059738	2.136288	0.1	3.7	20
Trichloroethylene	A	10.0	9.78	0.4242284	0.4147411	0.2	-2.2	20
Vinyl Chloride	A	10.0	11.2	1.49108	1.669134	0.1	11.9	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729651.D
Acq On : 1 Nov 2018 10:12 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CCV1
Misc : QBV7110118A
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 14:23:54 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	64026	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	245464	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	100160	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	74733	10.68	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.80%				
51) Toluene-d8 (SURR)	7.484	98	321751	9.58	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.80%				
70) p-Bromofluorobenzene (...	10.271	95	119101	9.28	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 92.80%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	78446	11.60	ppb		100
3) Chloromethane	1.766	50	85070	7.79	ppb		99
4) Vinyl Chloride	1.875	62	106868	11.19	ppb		100
5) Bromomethane	2.242	94	27941	4.92	ppb		100
6) Chloroethane	2.348	64	72358	12.99	ppb		100
7) Trichlorofluoromethane	2.592	101	167205	15.10	ppb		100
8) Ethanol	2.893	45	10788	995.75	ppb	#	52
9) Freon-113	3.107	101	81572	11.06	ppb	#	78
10) 1,1-Dichloroethylene	3.141	61	138436	10.47	ppb		90
11) Acrolein	3.096	56	10502	16.35	ppb		95
12) Acetone	3.257	43	20068	8.91	ppb	#	100
13) Iodomethane	3.324	142	26877	2.49	ppb		100
14) Methyl Acetate	3.552	43	41765	9.39	ppb		98
15) Carbon disulfide	3.371	76	244050	10.14	ppb		100
16) tert-Butyl Alcohol (TBA)	3.803	59	30137	66.01	ppb	#	100
17) Methylene Chloride	3.672	49	118156	9.15	ppb		85
18) Acrylonitrile	3.956	53	17084	9.91	ppb	#	67
19) trans-1,2-Dichloroethy...	3.903	61	136778	10.37	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.875	73	236221	10.98	ppb	#	90
21) 1,1-Dichloroethane	4.331	63	172697	10.59	ppb		99
22) Vinyl Acetate	4.359	43	126199	7.58	ppb	#	100
23) Diisopropyl ether (DIPE)	4.315	45	301520	9.34	ppb		97
24) Ethyl-tert-Butyl ether...	4.660	59	297403	10.23	ppb	#	98
25) cis-1,2-Dichloroethylene	4.893	61	159046	10.71	ppb		96
26) 2-Butanone	4.916	72	8243	12.27	ppb	#	100
27) 2,2-Dichloropropane	4.863	77	146507	11.50	ppb	#	100
28) Tetrahydrofuran	5.163	71	7157	11.10	ppb	#	1
29) Bromochloromethane	5.135	49	74079	10.16	ppb	#	88
30) Chloroform	5.199	83	169315	11.36	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	156974	11.59	ppb	#	99
32) Cyclohexane	5.344	56	154457	10.20	ppb		90
33) 1,1-Dichloropropylene	5.483	75	138746	11.33	ppb		96
35) Carbon Tetrachloride	5.475	117	138262	11.56	ppb		100
36) tert-Amyl alcohol (TAA)	5.717	59	65452	113.64	ppb	#	78
37) 1,2-Dichloroethane	5.756	62	114514	11.54	ppb		99
38) Benzene	5.695	78	387616	11.32	ppb	#	75
39) tert-Amyl methyl ether...	5.745	73	302134	11.21	ppb	#	98
41) Trichloroethylene	6.301	95	101804	9.78	ppb		98
42) Methyl Cyclohexane	6.432	83	146691	10.39	ppb		87
43) Methyl Methacrylate	6.613	69	48879	9.74	ppb	#	26
44) Dibromomethane	6.696	93	49771	10.69	ppb		99
45) Bromodichloromethane	6.835	83	122802	10.13	ppb		98
46) 1,2-Dichloropropane	6.552	63	94708	9.59	ppb		98
47) 1,4-Dioxane	6.693	88	3162	346.20	ppb		98
48) 2-Chloroethyl vinyl ether	7.091	63	22420	5.10	ppb		99
49) cis-1,3-Dichloropropene	7.253	75	148219	9.96	ppb		95
50) 4-Methyl-2-Pentanone	7.386	43	65789	8.36	ppb		95
52) Toluene	7.553	91	429008	10.72	ppb		100

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729651.D
Acq On : 1 Nov 2018 10:12 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CCV1
Misc : QBV7110118A
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 01 14:23:54 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

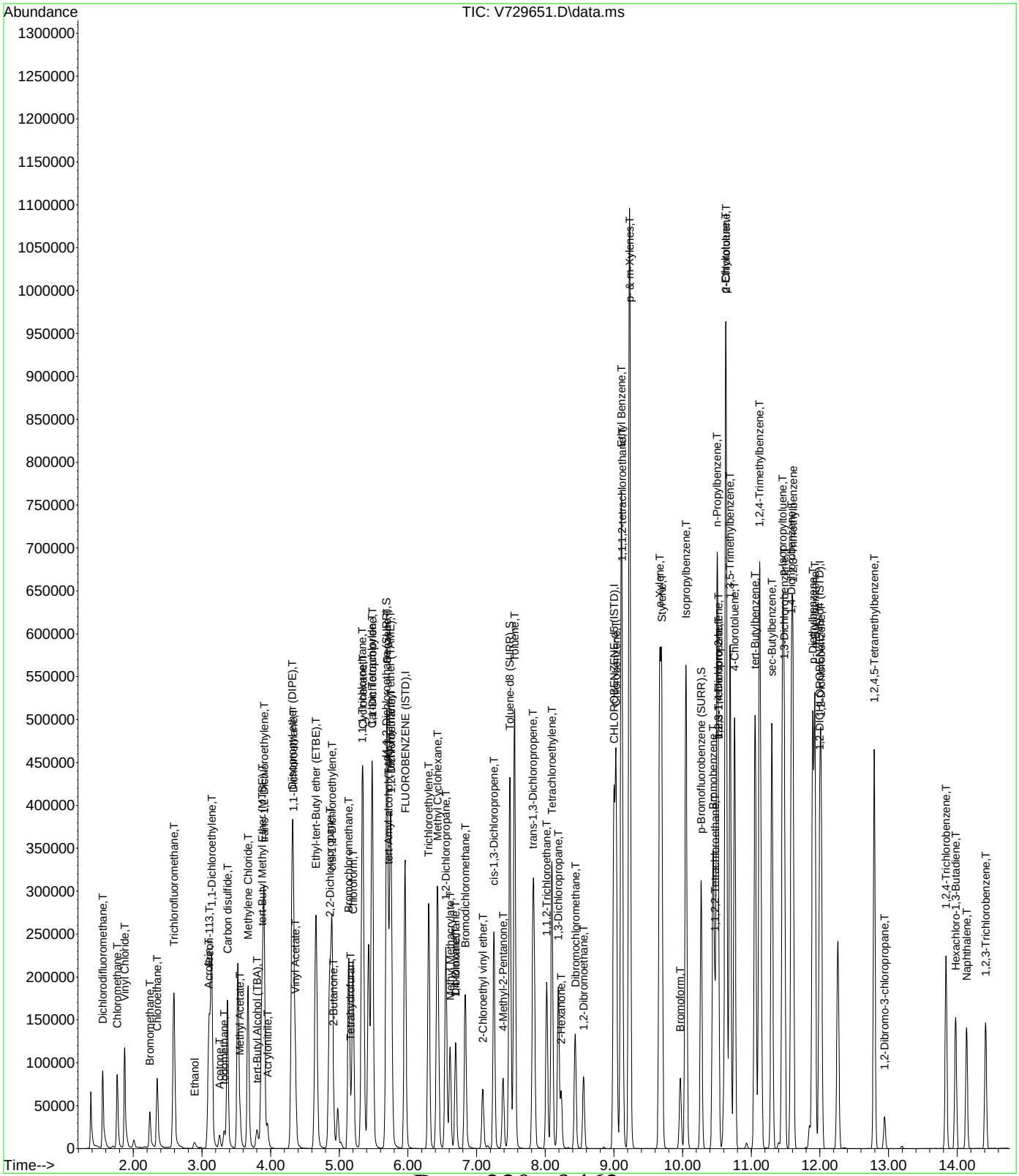
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) trans-1,3-Dichloropropene	7.820	75	129028	9.81	ppb		100
54) 1,1,2-Trichloroethane	8.021	97	67633	10.24	ppb		97
55) 1,3-Dichloropropane	8.190	76	116121	10.08	ppb	#	100
56) Tetrachloroethylene	8.096	166	110490	8.17	ppb	#	100
57) 2-Hexanone	8.232	43	47655	8.31	ppb		89
58) Dibromochloromethane	8.438	129	80891	9.69	ppb		98
59) 1,2-Dibromoethane	8.558	107	63935	9.81	ppb		99
60) Chlorobenzene	9.031	112	264278	10.38	ppb		98
61) 1,1,1,2-tetrachloroethane	9.120	131	94866	10.19	ppb		99
62) Ethyl Benzene	9.108	91	483106	10.89	ppb		100
63) p- & m-Xylenes	9.228	91	767210	18.82	ppb		99
64) o-Xylene	9.668	91	370135	10.73	ppb		99
65) Styrene	9.695	104	292471	10.51	ppb	#	100
66) Bromoform	9.965	173	44575	8.96	ppb	#	76
68) p-Ethyltoluene	10.628	105	446418	9.96	ppb	#	87
69) Isopropylbenzene	10.049	105	457910	9.75	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.472	83	79749	9.69	ppb	#	100
72) Bromobenzene	10.444	77	165795	9.43	ppb		95
73) trans-1,4-Dichloro-2-b...	10.522	75	88873	9.14	ppb		93
74) 1,2,3-Trichloropropane	10.522	110	22954	9.68	ppb		92
75) n-Propylbenzene	10.502	91	556214	10.30	ppb		100
76) 2-Chlorotoluene	10.633	91	379595	10.26	ppb		100
77) 4-Chlorotoluene	10.758	91	346507	10.24	ppb		100
78) 1,3,5-Trimethylbenzene	10.692	105	384258	9.99	ppb		99
79) tert-Butylbenzene	11.056	119	308471	9.75	ppb		100
80) 1,2,4-Trimethylbenzene	11.120	105	378055	9.95	ppb		98
81) sec-Butylbenzene	11.301	105	424626	10.15	ppb		99
82) 1,3-Dichlorobenzene	11.482	146	210376	10.12	ppb		98
83) p-Isopropyltoluene	11.457	119	386012	9.88	ppb		99
84) 1,4-Dichlorobenzene	11.585	146	208561	9.99	ppb		98
85) 1,2,3-Trimethylbenzene	11.607	105	363741	9.86	ppb		99
86) p-Diethylbenzene	11.896	105	191885	9.67	ppb		97
87) 1,2-Dichlorobenzene	12.019	146	178939	9.79	ppb	#	100
88) n-Butylbenzene	11.927	91	340813m	9.17	ppb		
89) 1,2-Dibromo-3-chloropr...	12.942	75	10331	7.86	ppb		92
90) 1,2,4,5-Tetramethylben...	12.792	119	287842	8.72	ppb		99
91) 1,2,4-Trichlorobenzene	13.838	180	80788	8.28	ppb		98
92) Hexachloro-1,3-Butadiene	13.977	225	35152	8.39	ppb		99
93) Naphthalene	14.139	128	130978	7.43	ppb		100
94) 1,2,3-Trichlorobenzene	14.414	180	52505	7.76	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729651.D
Acq On : 1 Nov 2018 10:12 am
InstName : MSVOA7
Operator : SS
Sample : SEQ-CCV1
Misc : QBV7110118A
ALS Vial : 2 Sample Multiplier: 1

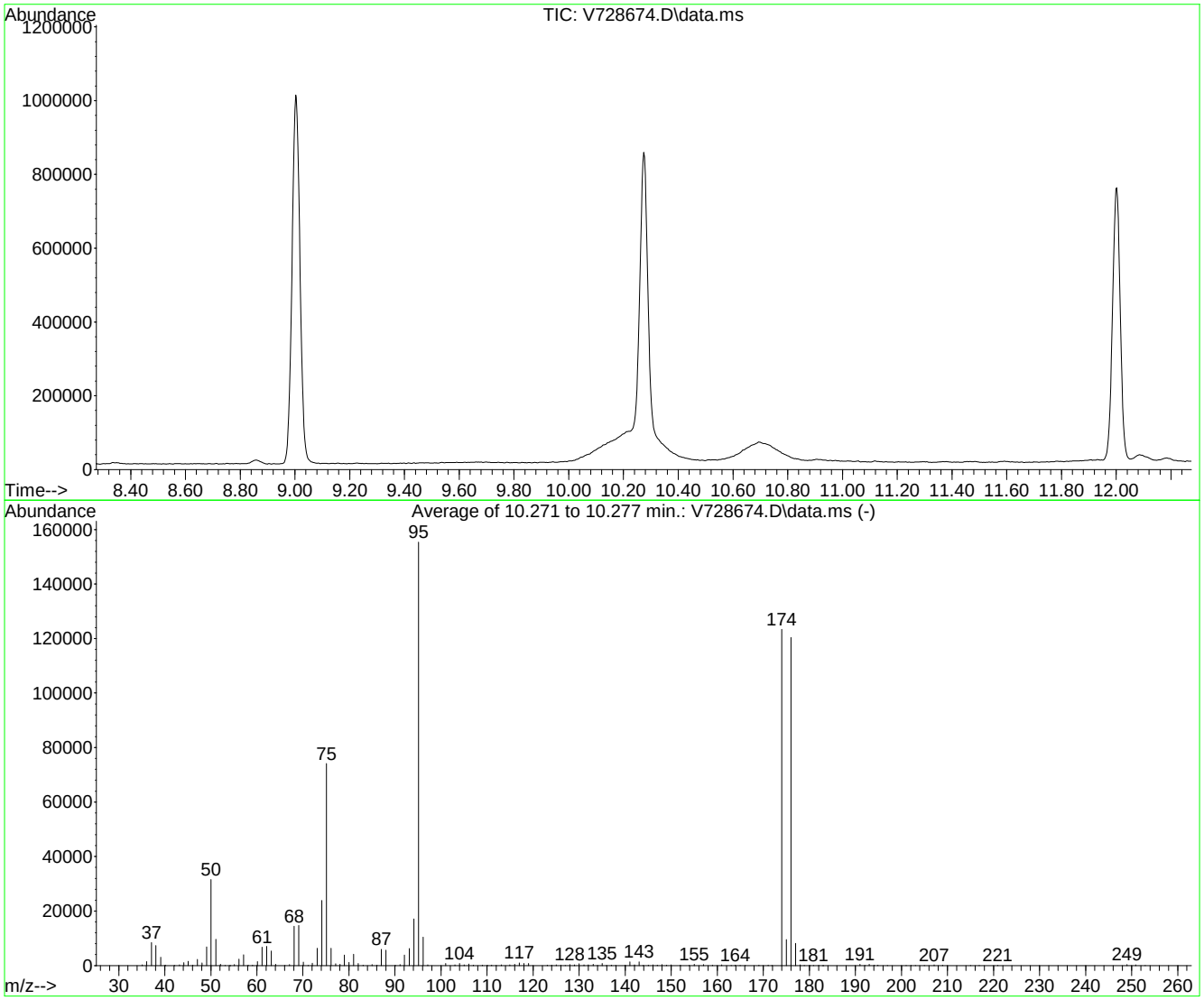
Quant Time: Nov 01 14:23:54 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\V7091818\
Data File : V728674.D
Acq On : 18 Sep 2018 8:28 am
Operator : SS
Sample : SEQ-TUN1
Sample : SEQ-TUN1 Inst : MSVOA7
Misc : QBV7091818A
ALS Vial : 3 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\V7LO0120.M
Title : Volatile Organics EPA 8260C
Last Update : Tue Sep 18 15:18:53 2018



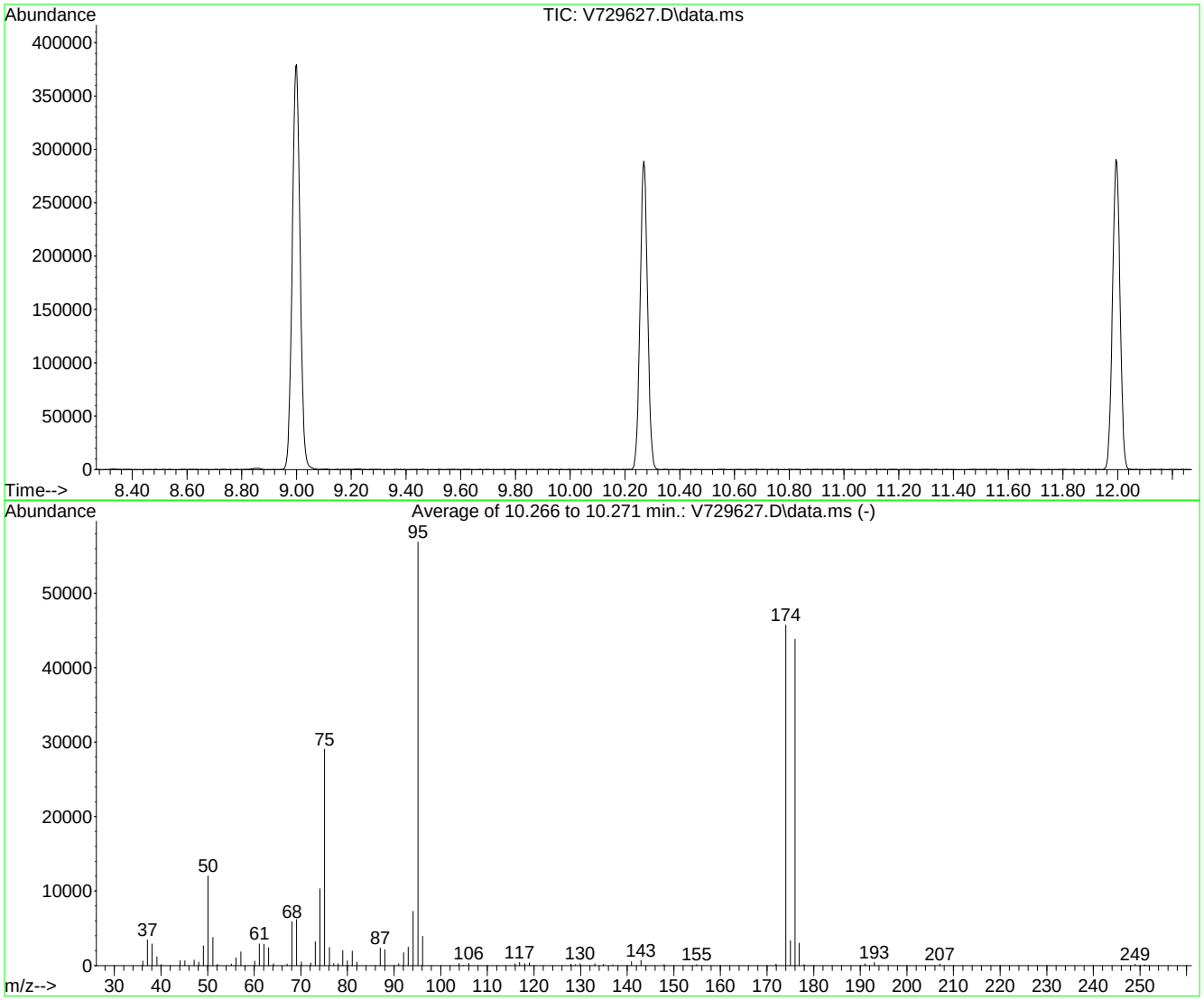
AutoFind: Scans 3264, 3265, 3266; Background Corrected with Scan 3244

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.3	31553	PASS
75	95	30	60	47.7	74152	PASS
95	95	100	100	100.0	155335	PASS
96	95	5	9	6.7	10377	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.4	123376	PASS
175	174	5	9	7.7	9533	PASS
176	174	95	101	97.6	120379	PASS
177	176	5	9	6.7	8091	PASS

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729627.D
Acq On : 31 Oct 2018 9:40 am
Operator : SS
Sample : SEQ-TUN1
Sample : SEQ-TUN1 Inst : MSVOA7
Misc : QBV7103118A
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\V7LO0120.M
Title : Volatile Organics EPA 8260C
Last Update : Tue Sep 18 15:18:53 2018



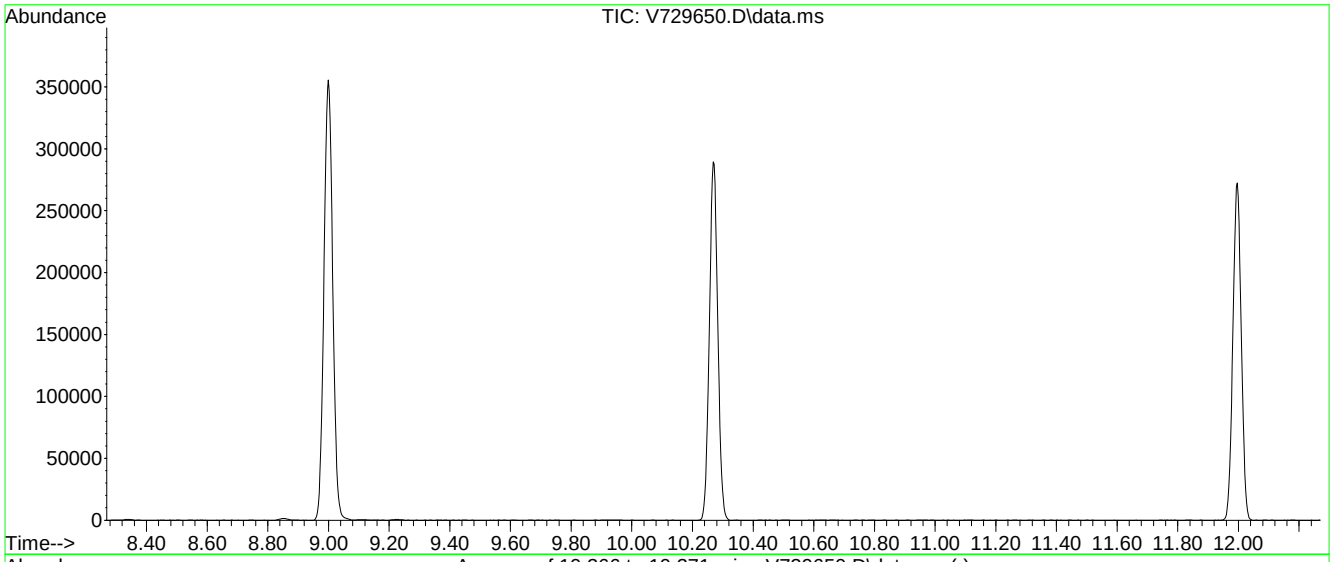
AutoFind: Scans 3262, 3263, 3264; Background Corrected with Scan 3245

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.2	12032	PASS
75	95	30	60	51.1	29059	PASS
95	95	100	100	100.0	56845	PASS
96	95	5	9	6.9	3920	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.4	45717	PASS
175	174	5	9	7.3	3352	PASS
176	174	95	101	95.9	43845	PASS
177	176	5	9	6.9	3008	PASS

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729650.D
Acq On : 1 Nov 2018 9:40 am
Operator : SS
Sample : SEQ-TUN1
Sample : SEQ-TUN1 Inst : MSVOA7
Misc : QBV7110118A
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\V7LO0120.M
Title : Volatile Organics EPA 8260C
Last Update : Tue Sep 18 15:18:53 2018



AutoFind: Scans 3262, 3263, 3264; Background Corrected with Scan 3245

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.1	11575	PASS
75	95	30	60	53.1	29115	PASS
95	95	100	100	100.0	54797	PASS
96	95	5	9	7.0	3831	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.6	43640	PASS
175	174	5	9	7.9	3432	PASS
176	174	95	101	96.4	42088	PASS
177	176	5	9	7.2	3030	PASS

METHOD BLANK RAW DATA

SDG: 18J1263
CLASS: VOA
METHOD: EPA 8260C

FORM I

METHOD BLANK DATA SHEET

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BJ81730-BLK1	File ID:	V729632.D
Prepared:	10/31/18 07:30	Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Analyzed:	10/31/18 12:24	Instrument:	MSVOA7		
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021

CAS NO.	COMPOUND	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	0.500	U
75-34-3	1,1-Dichloroethane	0.500	U
75-35-4	1,1-Dichloroethylene	0.500	U
95-63-6	1,2,4-Trimethylbenzene	0.500	U
95-50-1	1,2-Dichlorobenzene	0.500	U
107-06-2	1,2-Dichloroethane	0.500	U
108-67-8	1,3,5-Trimethylbenzene	0.500	U
541-73-1	1,3-Dichlorobenzene	0.500	U
106-46-7	1,4-Dichlorobenzene	0.500	U
123-91-1	1,4-Dioxane	80.0	U
78-93-3	2-Butanone	0.500	U
67-64-1	Acetone	2.00	U
71-43-2	Benzene	0.500	U
56-23-5	Carbon tetrachloride	0.500	U
108-90-7	Chlorobenzene	0.500	U
67-66-3	Chloroform	0.500	U
156-59-2	cis-1,2-Dichloroethylene	0.500	U
100-41-4	Ethyl Benzene	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.500	U
75-09-2	Methylene chloride	2.00	U
91-20-3	Naphthalene	2.00	U
104-51-8	n-Butylbenzene	0.500	U
103-65-1	n-Propylbenzene	0.500	U
95-47-6	o-Xylene	0.500	U
179601-23-1	p- & m- Xylenes	1.00	U
135-98-8	sec-Butylbenzene	0.500	U
98-06-6	tert-Butylbenzene	0.500	U
127-18-4	Tetrachloroethylene	0.500	U
108-88-3	Toluene	0.500	U
156-60-5	trans-1,2-Dichloroethylene	0.500	U

FORM I

METHOD BLANK DATA SHEET

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BJ81730-BLK1	File ID:	V729632.D
Prepared:	10/31/18 07:30	Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Analyzed:	10/31/18 12:24	Instrument:	MSVOA7		
Batch:	BJ81730	Sequence:	Y8K0116	Calibration:	YI80021

CAS NO.	COMPOUND	CONC. (ug/L)	Q
79-01-6	Trichloroethylene	0.500	U
75-01-4	Vinyl Chloride	0.500	U
1330-20-7	Xylenes, Total	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.9	109	69 - 130	
SURR: Toluene-d8	10.0	9.55	95.5	81 - 117	
SURR: p-Bromofluorobenzene	10.0	9.82	98.2	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	63370	5.959	65709	5.956	
ISTD: Chlorobenzene-d5	243950	9	252406	9	
ISTD: 1,2-Dichlorobenzene-d4	87820	11.996	100688	11.996	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729632.D
Acq On : 31 Oct 2018 12:24 pm
InstName : MSVOA7
Operator : SS
Sample : BJ81730-BLK1
Misc : QBV7103118A
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 31 15:29:20 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

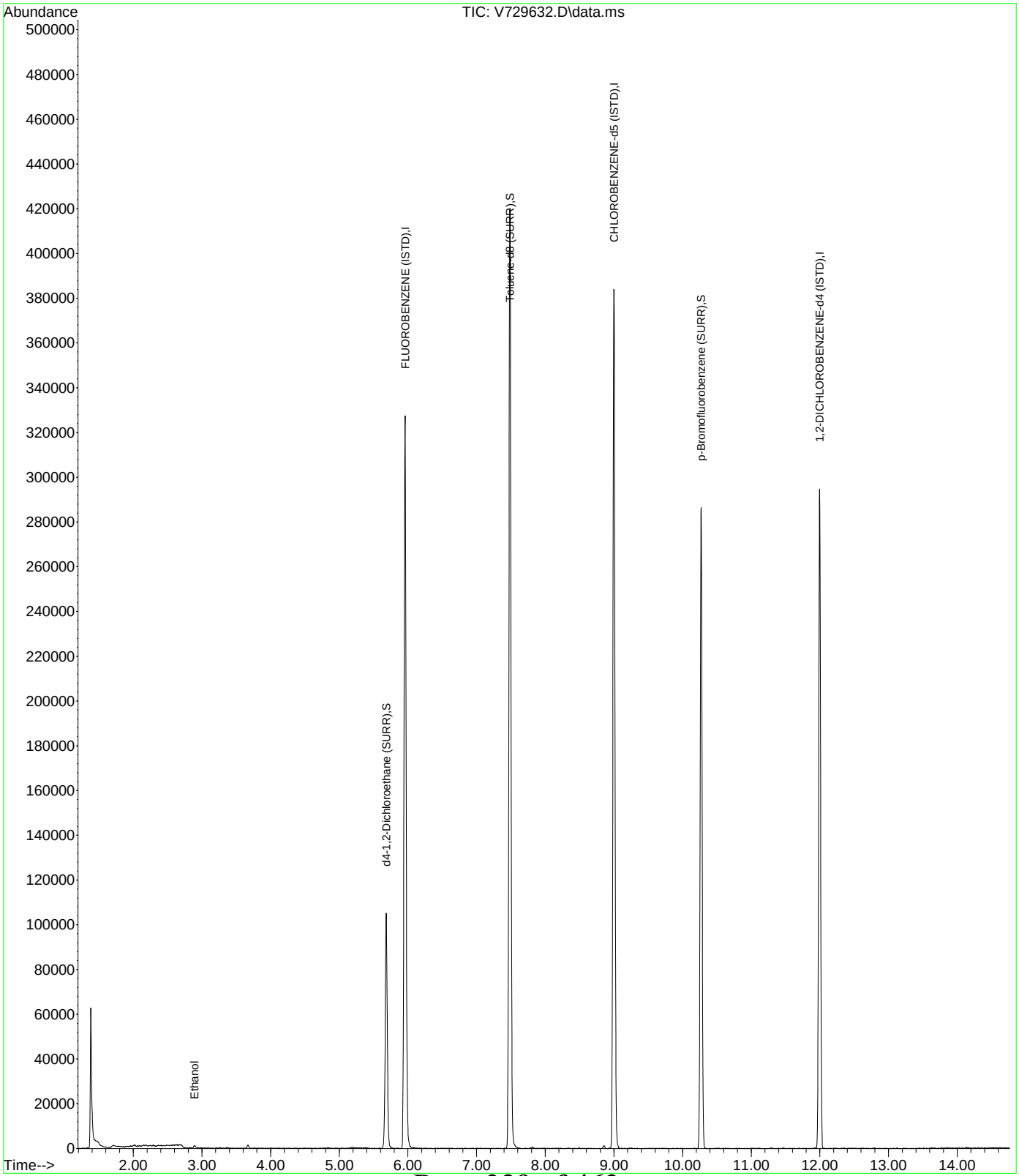
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) FLUOROBENZENE (ISTD)	5.959	70	63370	10.00	ppb	# 0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	243950	10.00	ppb	0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	87820	10.00	ppb	0.00
System Monitoring Compounds						
34) d4-1,2-Dichloroethane ...	5.683	65	75542	10.91	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.10%			
51) Toluene-d8 (SURR)	7.486	98	318595	9.55	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.50%			
70) p-Bromofluorobenzene (...	10.271	95	110550	9.82	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.20%			
Target Compounds						Qvalue
8) Ethanol	2.890	45	1225m	114.24	ppb	

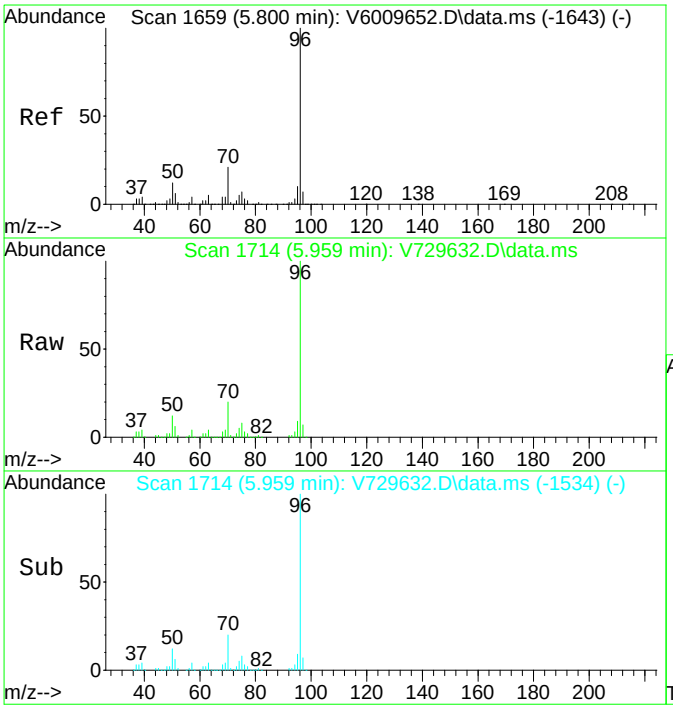
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729632.D
Acq On : 31 Oct 2018 12:24 pm
InstName : MSVOA7
Operator : SS
Sample : BJ81730-BLK1
Misc : QBV7103118A
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 31 15:29:20 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

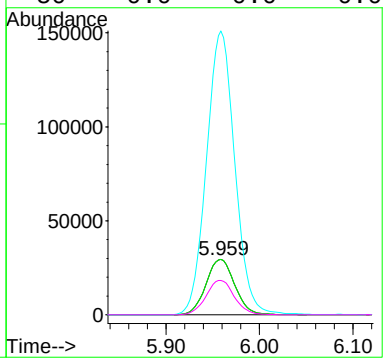


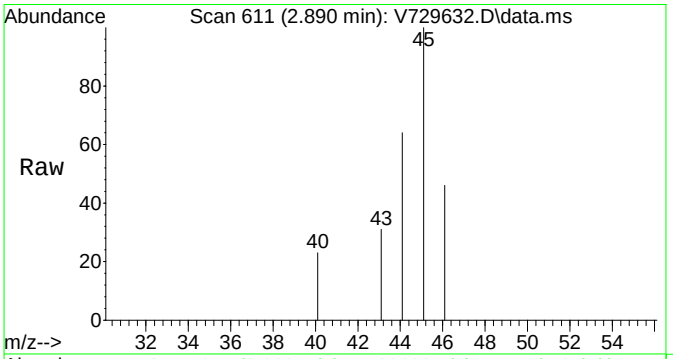


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729632.D
Acq: 31 Oct 2018 12:24 pm

Tgt Ion: 70 Resp: 63370

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	501.8	323.6	672.2
50	0.0	0.0	0.0

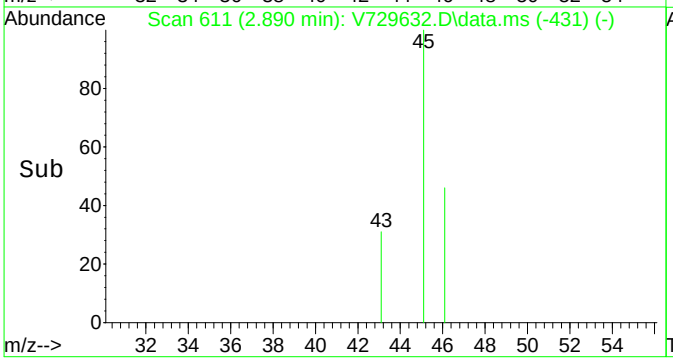


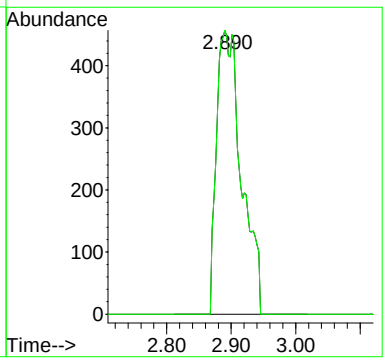


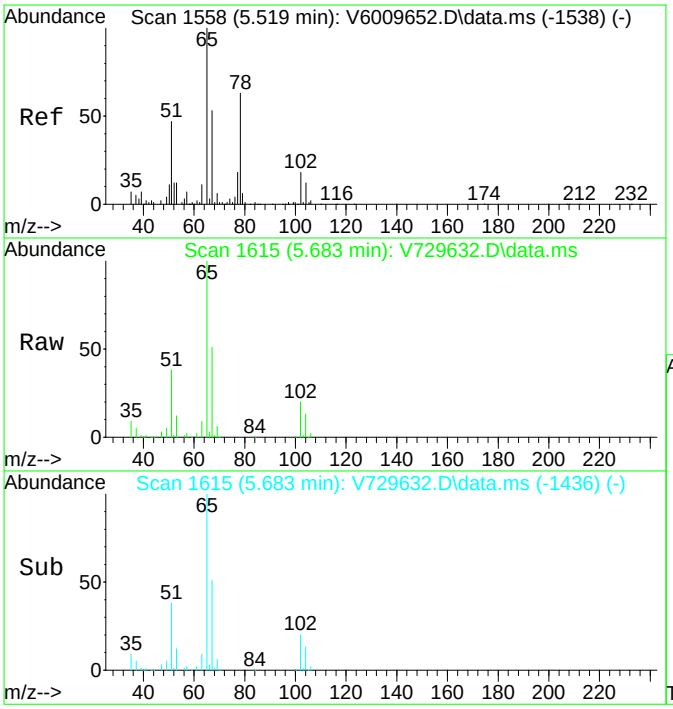
#8
Ethanol
Concen: 114.24 ppb m
RT: 2.890 min Scan# 611
Delta R.T. -0.000 min
Lab File: V729632.D
Acq: 31 Oct 2018 12:24 pm

Tgt Ion: 45 Resp: 1225

Ion	Ratio	Lower	Upper
45	100		
45	53.5	31.3	93.9



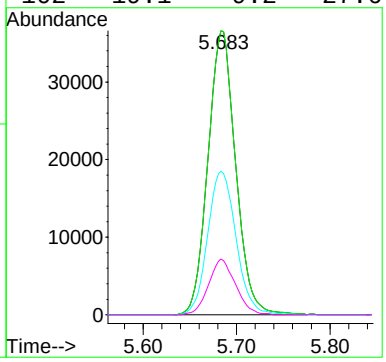


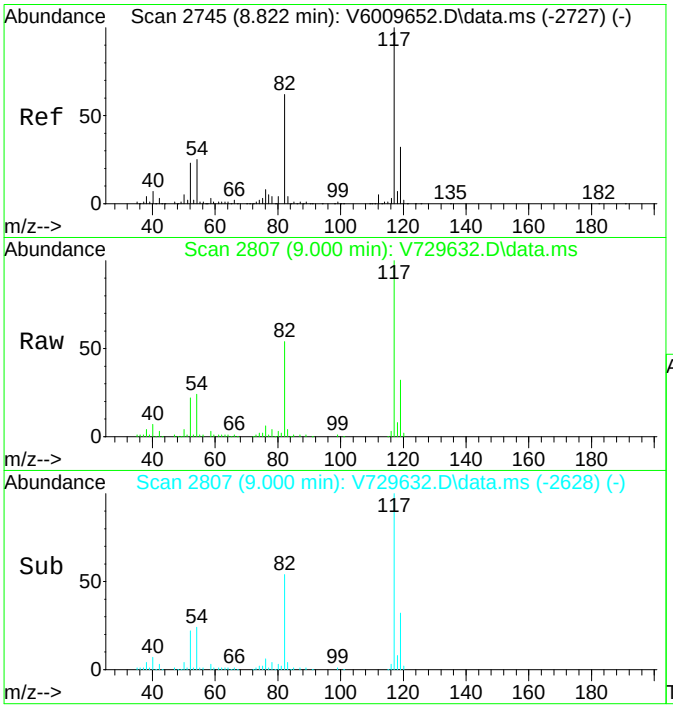


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.91 ppb
RT: 5.683 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729632.D
Acq: 31 Oct 2018 12:24 pm

Tgt Ion: 65 Resp: 75542

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	51.8	33.0	68.6
102	19.1	9.2	27.6

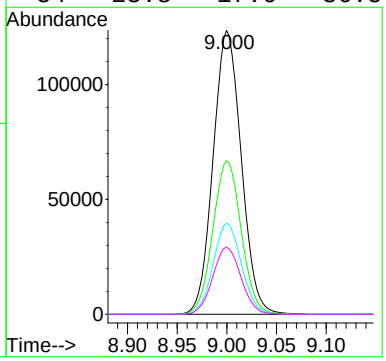


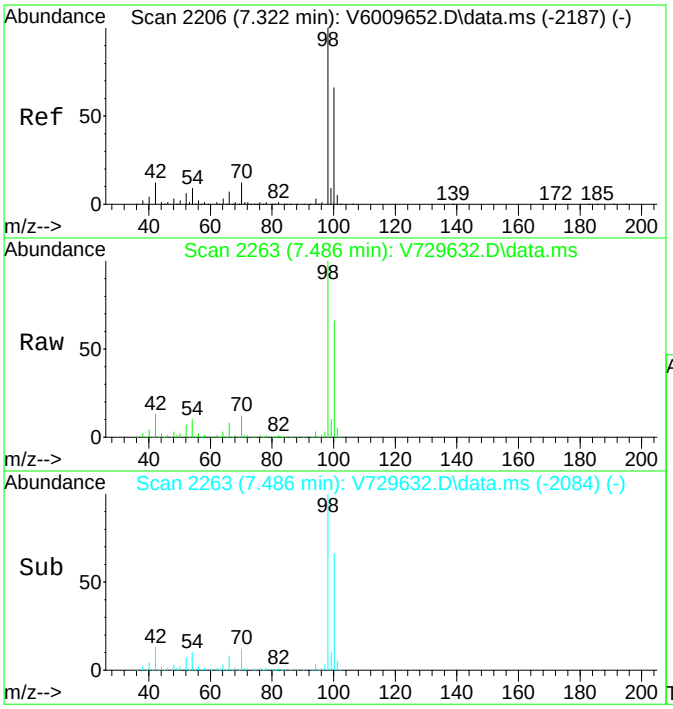


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729632.D
Acq: 31 Oct 2018 12:24 pm

Tgt Ion:117 Resp: 243950

Ion	Ratio	Lower	Upper
117	100		
82	54.5	35.9	74.7
119	32.3	20.8	43.2
54	23.8	17.6	36.5

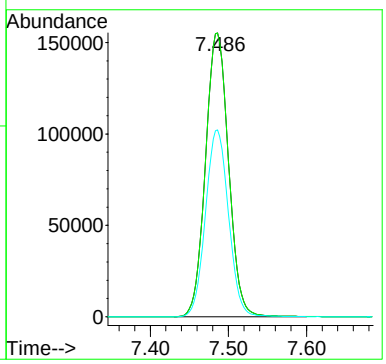


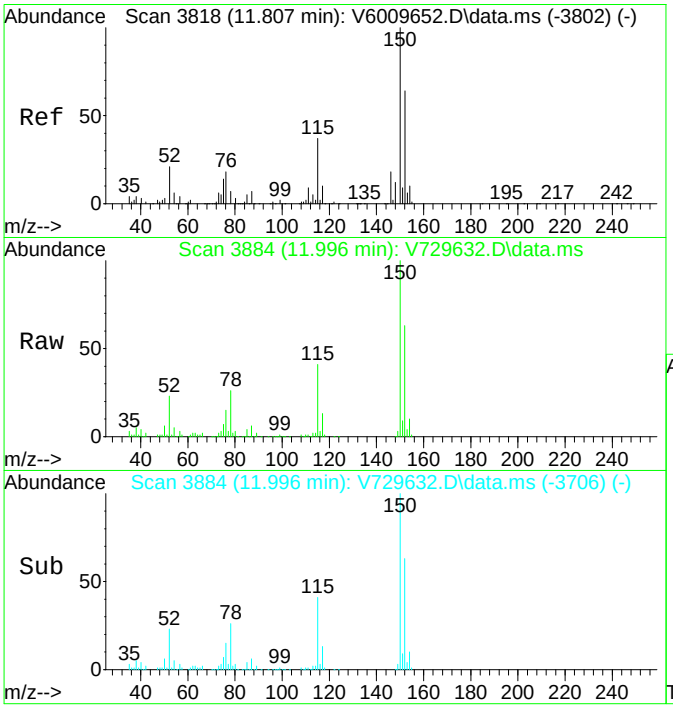


#51
Toluene-d8 (SURR)
Concen: 9.55 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729632.D
Acq: 31 Oct 2018 12:24 pm

Tgt Ion: 98 Resp: 318595

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	65.8	43.4	90.2

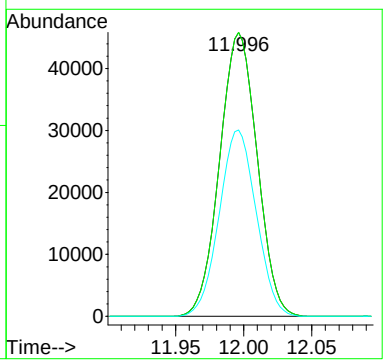


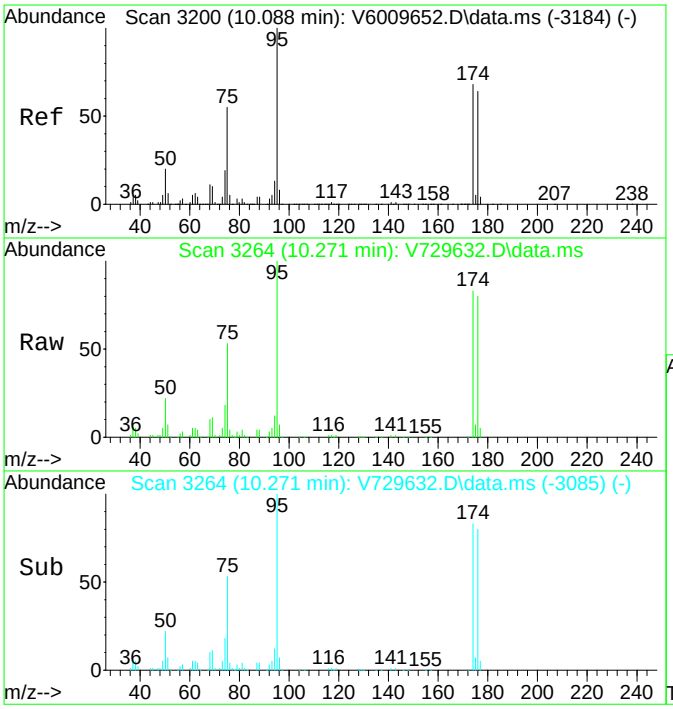


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.006 min
Lab File: V729632.D
Acq: 31 Oct 2018 12:24 pm

Tgt Ion:152 Resp: 87820

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	64.9	33.7	101.0

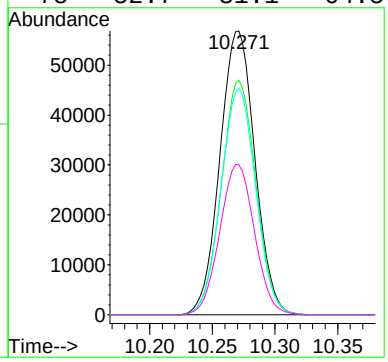




#70
p-Bromofluorobenzene (SURR)
Concen: 9.82 ppb
RT: 10.271 min Scan# 3264
Delta R.T. -0.003 min
Lab File: V729632.D
Acq: 31 Oct 2018 12:24 pm

Tgt Ion: 95 Resp: 110550

Ion	Ratio	Lower	Upper
95	100		
174	81.9	49.1	102.1
176	79.1	47.7	99.1
75	52.7	31.1	64.5



METHOD BLANK RAW DATA

SDG: 18J1263
CLASS: VOA
METHOD: EPA 8260C

FORM I

METHOD BLANK DATA SHEET

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BK80021-BLK1	File ID:	V729654.D
Prepared:	11/01/18 07:30	Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Analyzed:	11/01/18 11:47	Instrument:	MSVOA7		
Batch:	BK80021	Sequence:	Y8K0121	Calibration:	YI80021

CAS NO.	COMPOUND	CONC. (ug/L)	Q
71-55-6	1,1,1-Trichloroethane	0.500	U
75-34-3	1,1-Dichloroethane	0.500	U
75-35-4	1,1-Dichloroethylene	0.500	U
95-63-6	1,2,4-Trimethylbenzene	0.500	U
95-50-1	1,2-Dichlorobenzene	0.500	U
107-06-2	1,2-Dichloroethane	0.500	U
108-67-8	1,3,5-Trimethylbenzene	0.500	U
541-73-1	1,3-Dichlorobenzene	0.500	U
106-46-7	1,4-Dichlorobenzene	0.500	U
123-91-1	1,4-Dioxane	80.0	U
78-93-3	2-Butanone	0.500	U
67-64-1	Acetone	2.00	U
71-43-2	Benzene	0.500	U
56-23-5	Carbon tetrachloride	0.500	U
108-90-7	Chlorobenzene	0.500	U
67-66-3	Chloroform	0.500	U
156-59-2	cis-1,2-Dichloroethylene	0.500	U
100-41-4	Ethyl Benzene	0.500	U
1634-04-4	Methyl tert-butyl ether (MTBE)	0.500	U
75-09-2	Methylene chloride	2.00	U
91-20-3	Naphthalene	2.00	U
104-51-8	n-Butylbenzene	0.500	U
103-65-1	n-Propylbenzene	0.500	U
95-47-6	o-Xylene	0.500	U
179601-23-1	p- & m- Xylenes	1.00	U
135-98-8	sec-Butylbenzene	0.500	U
98-06-6	tert-Butylbenzene	0.500	U
127-18-4	Tetrachloroethylene	0.500	U
108-88-3	Toluene	0.500	U
156-60-5	trans-1,2-Dichloroethylene	0.500	U

FORM I

METHOD BLANK DATA SHEET

EPA 8260C

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BK80021-BLK1	File ID:	V729654.D
Prepared:	11/01/18 07:30	Preparation:	EPA 5030B	Initial/Final:	25 mL / 25 mL
Analyzed:	11/01/18 11:47	Instrument:	MSVOA7		
Batch:	BK80021	Sequence:	Y8K0121	Calibration:	YI80021

CAS NO.	COMPOUND	CONC. (ug/L)	Q
79-01-6	Trichloroethylene	0.500	U
75-01-4	Vinyl Chloride	0.500	U
1330-20-7	Xylenes, Total	1.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
SURR: 1,2-Dichloroethane-d4	10.0	10.6	106	69 - 130	
SURR: Toluene-d8	10.0	9.66	96.6	81 - 117	
SURR: p-Bromofluorobenzene	10.0	10.1	101	79 - 122	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
ISTD: Fluorobenzene	64623	5.959	64026	5.959	
ISTD: Chlorobenzene-d5	242754	9	245464	9	
ISTD: 1,2-Dichlorobenzene-d4	86219	11.996	100160	11.996	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729654.D
Acq On : 1 Nov 2018 11:47 am
InstName : MSVOA7
Operator : SS
Sample : BK80021-BLK1
Misc : QBV7110118A
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 01 14:25:49 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

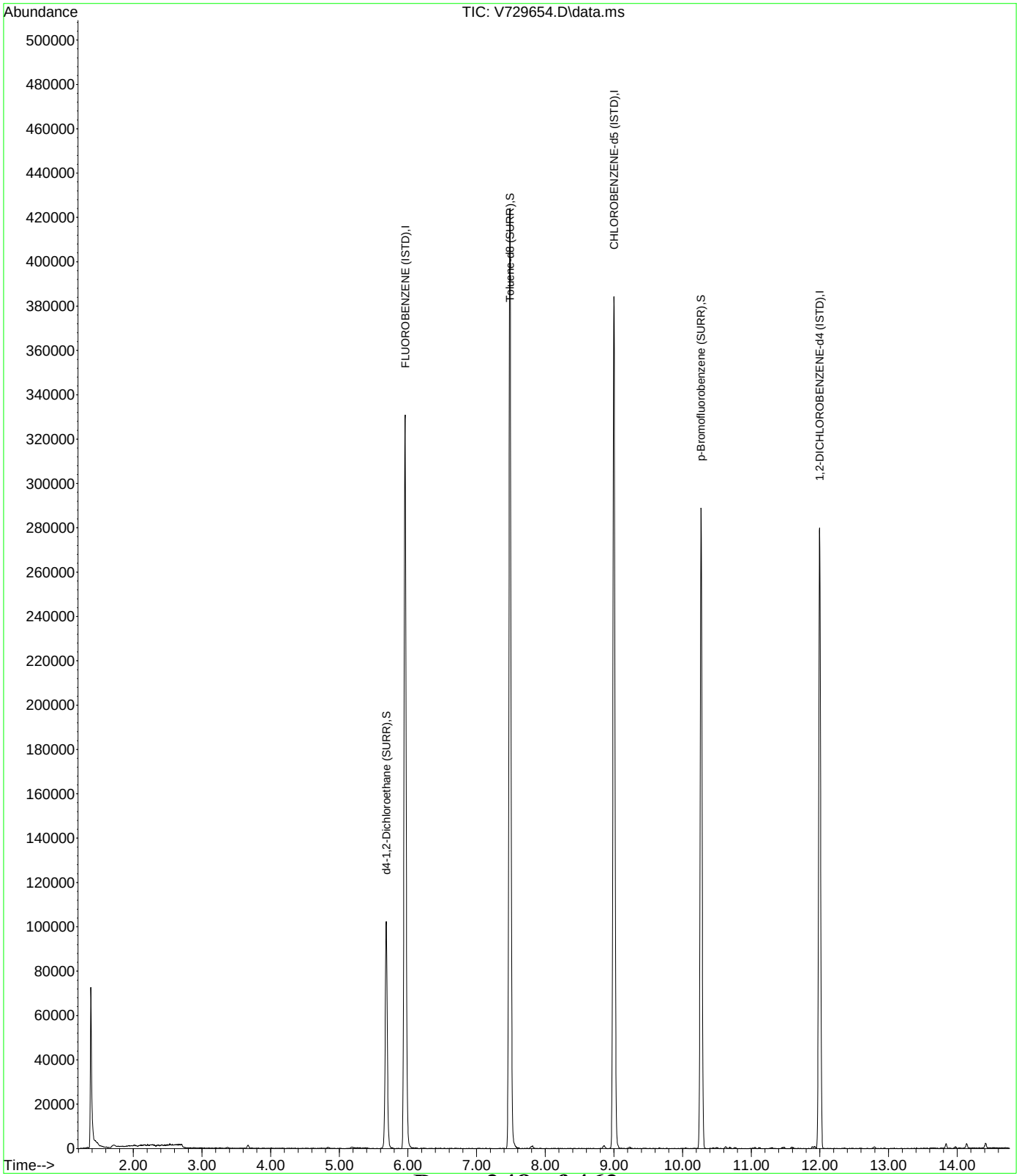
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) FLUOROBENZENE (ISTD)	5.959	70	64623	10.00	ppb	# 0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	242754	10.00	ppb	0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	86219	10.00	ppb	0.00
System Monitoring Compounds						
34) d4-1,2-Dichloroethane ...	5.684	65	74676	10.57	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 105.70%			
51) Toluene-d8 (SURR)	7.486	98	320757	9.66	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.60%			
70) p-Bromofluorobenzene (...	10.269	95	111162	10.06	ppb	0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 100.60%			
Target Compounds						Qvalue

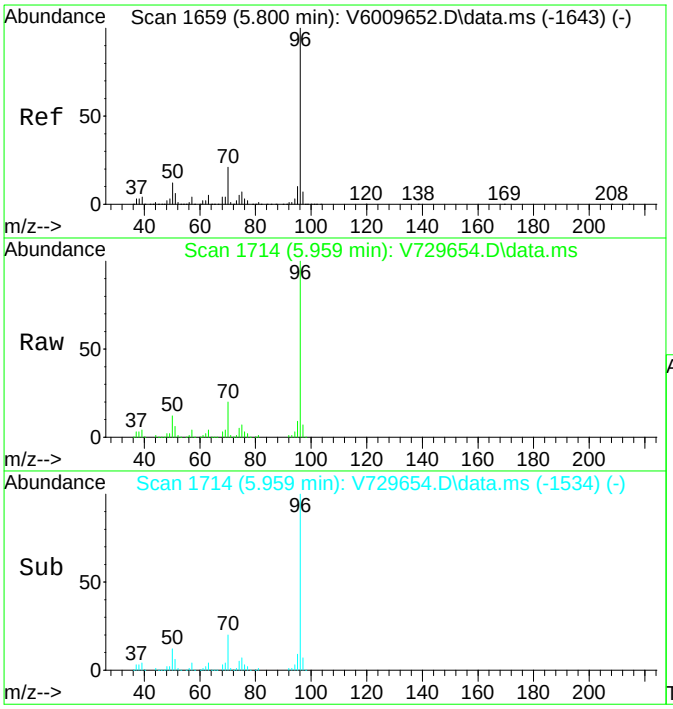
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729654.D
Acq On : 1 Nov 2018 11:47 am
InstName : MSVOA7
Operator : SS
Sample : BK80021-BLK1
Misc : QBV7110118A
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 01 14:25:49 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

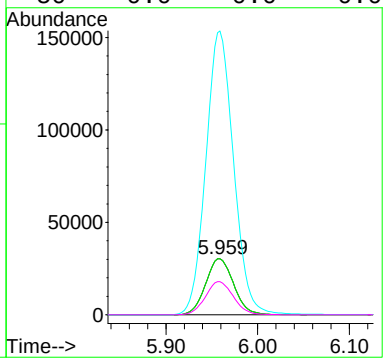


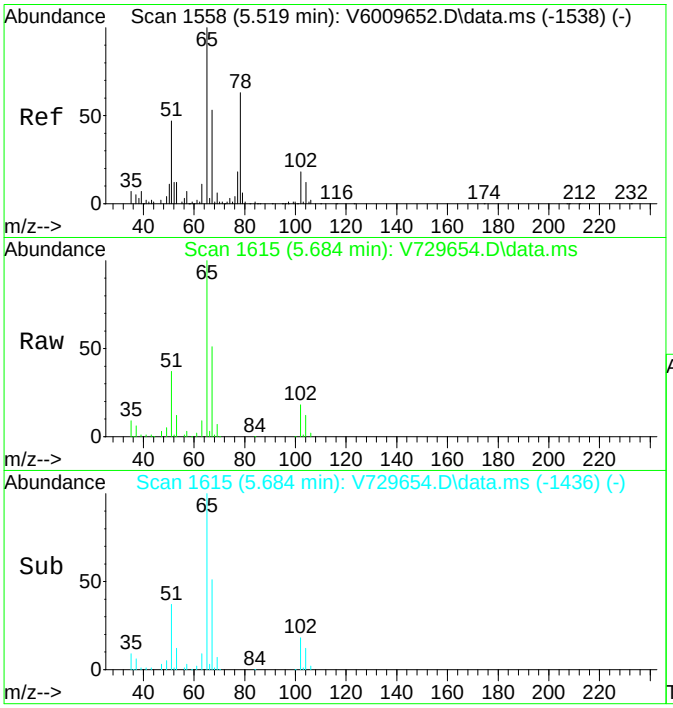


#1
FLUOROBENZENE (ISTD)
Concen: 10.00 ppb
RT: 5.959 min Scan# 1714
Delta R.T. -0.000 min
Lab File: V729654.D
Acq: 1 Nov 2018 11:47 am

Tgt Ion: 70 Resp: 64623

Ion	Ratio	Lower	Upper
70	100		
70	100.0	65.0	135.0
96	499.8	323.6	672.2
50	0.0	0.0	0.0

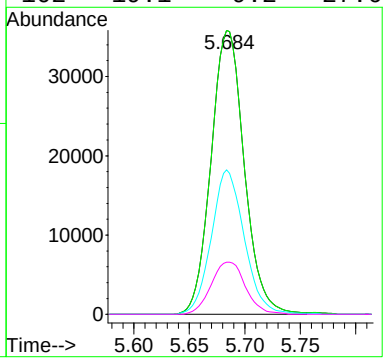


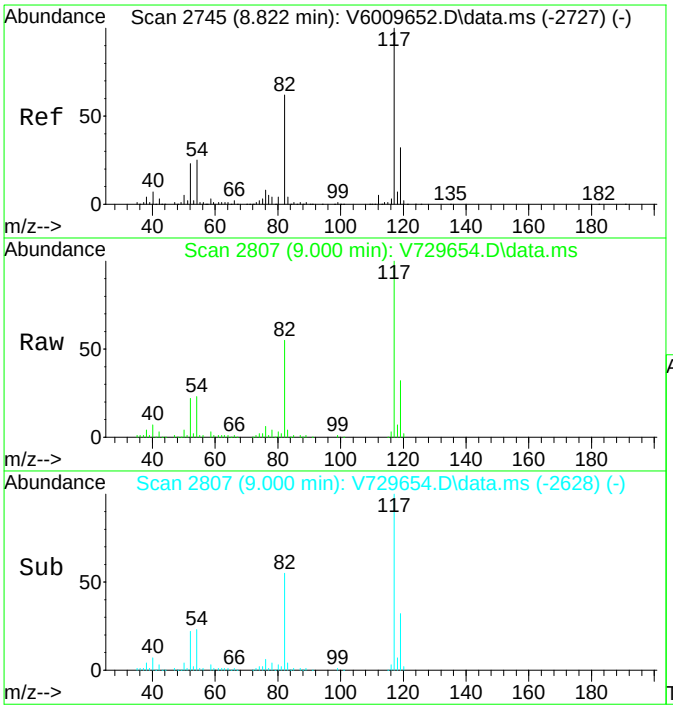


#34
d4-1,2-Dichloroethane (SURR)
Concen: 10.57 ppb
RT: 5.684 min Scan# 1615
Delta R.T. -0.003 min
Lab File: V729654.D
Acq: 1 Nov 2018 11:47 am

Tgt Ion: 65 Resp: 74676

Ion	Ratio	Lower	Upper
65	100		
65	100.0	65.0	135.0
67	50.6	33.0	68.6
102	19.1	9.2	27.6

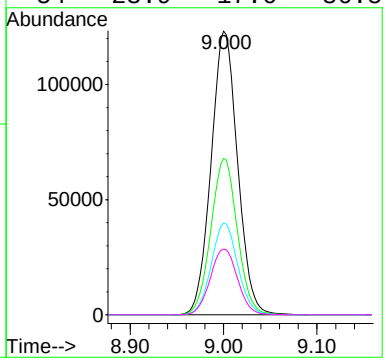


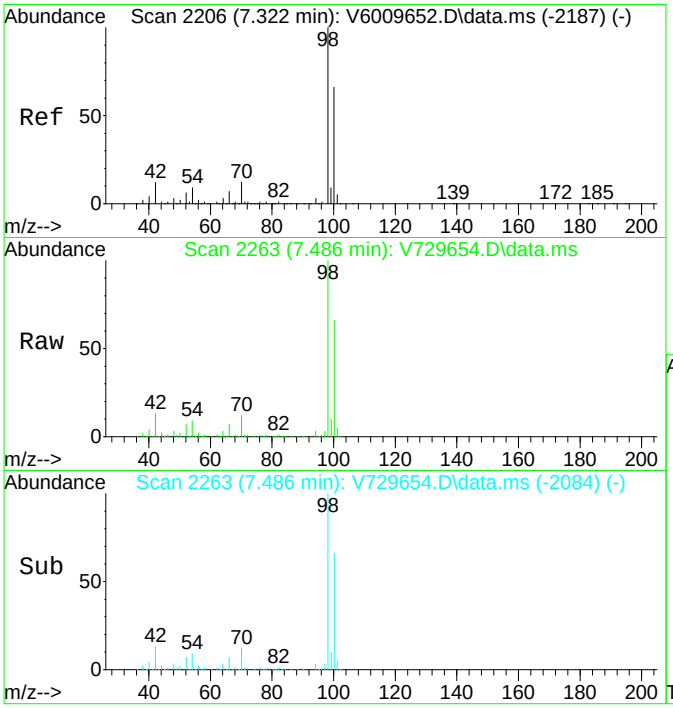


#40
CHLOROBENZENE-d5 (ISTD)
Concen: 10.00 ppb
RT: 9.000 min Scan# 2807
Delta R.T. -0.003 min
Lab File: V729654.D
Acq: 1 Nov 2018 11:47 am

Tgt Ion:117 Resp: 242754

Ion	Ratio	Lower	Upper
117	100		
82	55.1	35.9	74.7
119	32.6	20.8	43.2
54	23.9	17.6	36.5

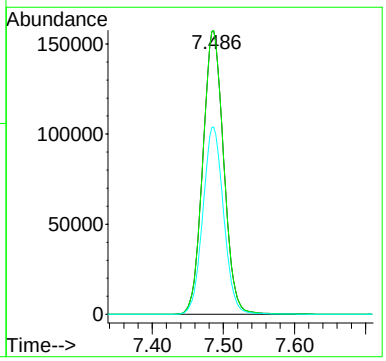


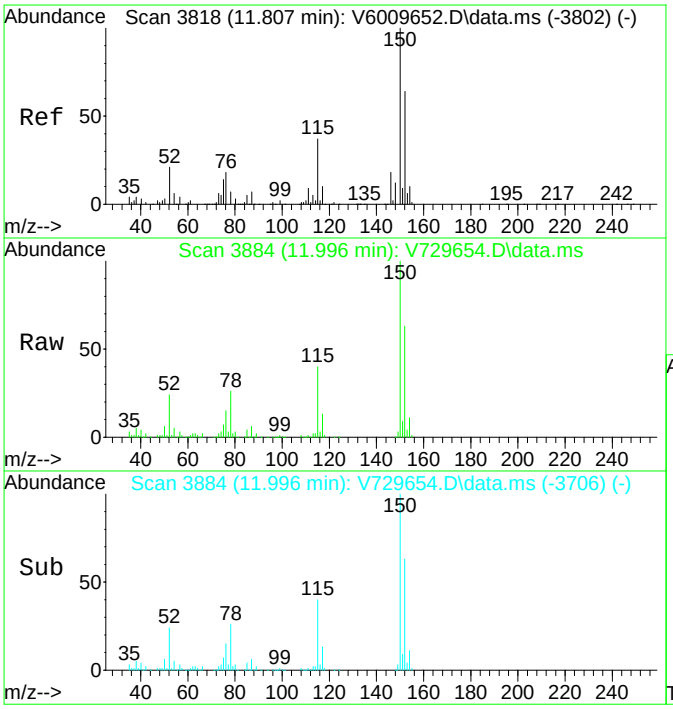


#51
Toluene-d8 (SURR)
Concen: 9.66 ppb
RT: 7.486 min Scan# 2263
Delta R.T. -0.003 min
Lab File: V729654.D
Acq: 1 Nov 2018 11:47 am

Tgt Ion: 98 Resp: 320757

Ion	Ratio	Lower	Upper
98	100		
98	100.0	65.0	135.0
100	65.8	43.4	90.2

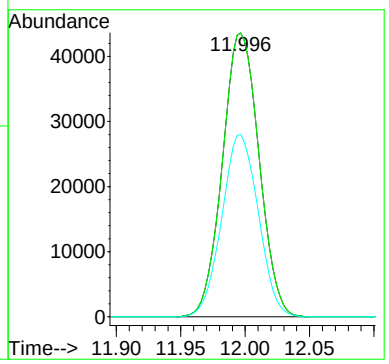


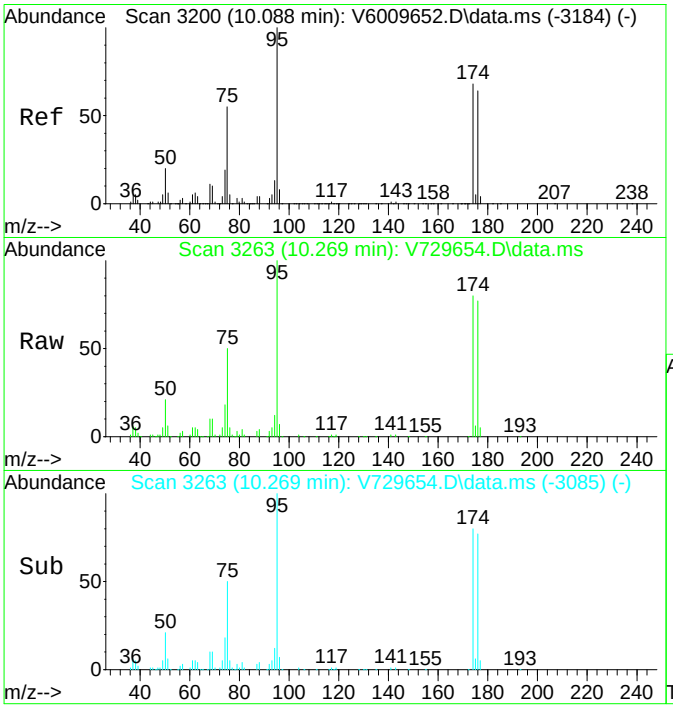


#67
1,2-DICHLOROBENZENE-d4 (ISTD)
Concen: 10.00 ppb
RT: 11.996 min Scan# 3884
Delta R.T. -0.005 min
Lab File: V729654.D
Acq: 1 Nov 2018 11:47 am

Tgt Ion:152 Resp: 86219

Ion	Ratio	Lower	Upper
152	100		
152	100.0	50.0	150.0
115	64.0	33.7	101.0

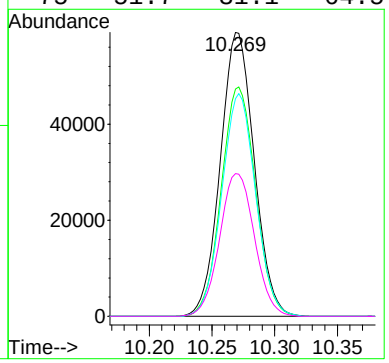




#70
p-Bromofluorobenzene (SURR)
Concen: 10.06 ppb
RT: 10.269 min Scan# 3263
Delta R.T. -0.005 min
Lab File: V729654.D
Acq: 1 Nov 2018 11:47 am

Tgt Ion: 95 Resp: 111162

Ion	Ratio	Lower	Upper
95	100		
174	81.6	49.1	102.1
176	78.5	47.7	99.1
75	51.7	31.1	64.5



MATRIX SPIKE RAW DATA

SDG: 18J1263
CLASS: VOA
METHOD: EPA 8260C

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729640.D
Acq On : 31 Oct 2018 4:38 pm
InstName : MSVOA7
Operator : SS
Sample : BJ81730-MS1
Misc : QBV7103118A 18J1263-01 D
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 01 12:41:36 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.956	70	63299	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	241114	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	94665	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	73761	10.66	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.60%				
51) Toluene-d8 (SURR)	7.486	98	316510	9.60	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.00%				
70) p-Bromofluorobenzene (...	10.269	95	115196	9.50	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.00%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	60624	9.07	ppb		100
3) Chloromethane	1.766	50	79777	7.39	ppb		98
4) Vinyl Chloride	1.875	62	135944	14.40	ppb		100
5) Bromomethane	2.242	94	24519	4.37	ppb		98
6) Chloroethane	2.348	64	68154	12.38	ppb		100
7) Trichlorofluoromethane	2.592	101	150512	13.75	ppb		100
9) Freon-113	3.107	101	62349	8.55	ppb		99
10) 1,1-Dichloroethylene	3.143	61	123866	9.48	ppb		95
11) Acrolein	3.099	56	6484	10.21	ppb		94
12) Acetone	3.257	43	13340	5.99	ppb	#	100
13) Iodomethane	3.321	142	25623	2.40	ppb		99
14) Methyl Acetate	3.555	43	35392	8.05	ppb		98
15) Carbon disulfide	3.371	76	223111	9.37	ppb		100
16) tert-Butyl Alcohol (TBA)	3.803	59	28004	62.04	ppb	#	100
17) Methylene Chloride	3.672	49	109210	8.55	ppb		85
18) Acrylonitrile	3.956	53	16223	9.52	ppb	#	67
19) trans-1,2-Dichloroethy...	3.906	61	123146	9.45	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	220453	10.36	ppb		98
21) 1,1-Dichloroethane	4.334	63	163706	10.16	ppb		99
22) Vinyl Acetate	4.359	43	115045	6.99	ppb	#	100
23) Diisopropyl ether (DIPE)	4.315	45	277802	8.70	ppb		97
24) Ethyl-tert-Butyl ether...	4.660	59	269040	9.36	ppb	#	98
25) cis-1,2-Dichloroethylene	4.893	61	346056	23.57	ppb		92
26) 2-Butanone	4.913	72	8675	13.06	ppb	#	100
27) 2,2-Dichloropropane	4.863	77	127647	10.14	ppb	#	100
28) Tetrahydrofuran	5.163	71	6608	10.37	ppb	#	68
29) Bromochloromethane	5.135	49	68356	9.49	ppb	#	64
30) Chloroform	5.199	83	162702	11.04	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	151409	11.31	ppb	#	99
32) Cyclohexane	5.344	56	138318	9.24	ppb		90
33) 1,1-Dichloropropylene	5.483	75	115609	9.55	ppb		89
35) Carbon Tetrachloride	5.475	117	129820	10.98	ppb		99
36) tert-Amyl alcohol (TAA)	5.717	59	60199	105.72	ppb	#	78
37) 1,2-Dichloroethane	5.759	62	107954	11.01	ppb		99
38) Benzene	5.695	78	366518	10.83	ppb	#	75
39) tert-Amyl methyl ether...	5.745	73	283012	10.62	ppb	#	99
41) Trichloroethylene	6.304	95	114875	11.23	ppb		98
42) Methyl Cyclohexane	6.429	83	108362	7.81	ppb		87
43) Methyl Methacrylate	6.613	69	46880	9.51	ppb	#	86
44) Dibromomethane	6.693	93	46170	10.10	ppb		99
45) Bromodichloromethane	6.835	83	114737	9.64	ppb		97
46) 1,2-Dichloropropane	6.552	63	86935	8.96	ppb		98
47) 1,4-Dioxane	6.693	88	2842	316.78	ppb		85
48) 2-Chloroethyl vinyl ether	7.553	63	35034	8.11	ppb	#	91
49) cis-1,3-Dichloropropene	7.253	75	131175	8.98	ppb		95
50) 4-Methyl-2-Pentanone	7.386	43	61053	7.90	ppb		94
52) Toluene	7.553	91	396850	10.09	ppb		100
53) trans-1,3-Dichloropropene	7.820	75	114549	8.87	ppb		100

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729640.D
Acq On : 31 Oct 2018 4:38 pm
InstName : MSVOA7
Operator : SS
Sample : BJ81730-MS1
Misc : QBV7103118A 18J1263-01 D
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 01 12:41:36 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

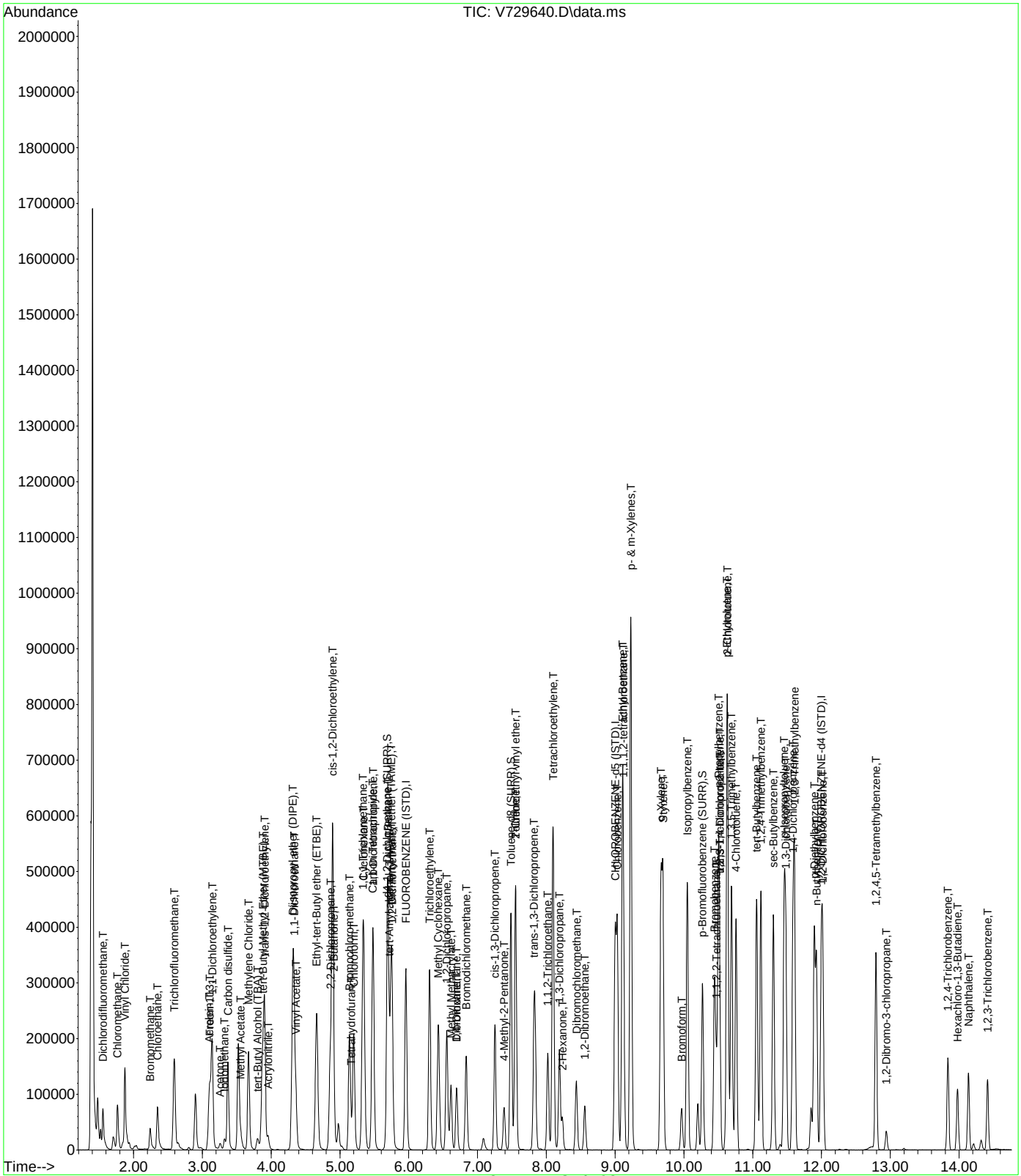
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
54) 1,1,2-Trichloroethane	8.021	97	62608	9.65	ppb		98
55) 1,3-Dichloropropane	8.190	76	110629	9.77	ppb	#	99
56) Tetrachloroethylene	8.098	166	192373	14.48	ppb	#	100
57) 2-Hexanone	8.235	43	43446	7.72	ppb		89
58) Dibromochloromethane	8.438	129	74683	9.10	ppb		98
59) 1,2-Dibromoethane	8.558	107	59590	9.31	ppb		99
60) Chlorobenzene	9.031	112	238341	9.53	ppb		99
61) 1,1,1,2-tetrachloroethane	9.120	131	90108	9.85	ppb		100
62) Ethyl Benzene	9.108	91	429177	9.85	ppb		100
63) p- & m-Xylenes	9.228	91	652573	16.30	ppb		99
64) o-Xylene	9.668	91	335546	9.90	ppb		100
65) Styrene	9.695	104	255290	9.34	ppb	#	100
66) Bromoform	9.968	173	41436	8.48	ppb	#	100
68) p-Ethyltoluene	10.628	105	362451	8.55	ppb	#	87
69) Isopropylbenzene	10.049	105	389681	8.78	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.472	83	76351	9.82	ppb	#	100
72) Bromobenzene	10.444	77	149092	8.97	ppb		95
73) trans-1,4-Dichloro-2-b...	10.519	75	79704	8.67	ppb		89
74) 1,2,3-Trichloropropane	10.519	110	21676	9.67	ppb		85
75) n-Propylbenzene	10.505	91	440622	8.63	ppb		100
76) 2-Chlorotoluene	10.633	91	320932	9.17	ppb		100
77) 4-Chlorotoluene	10.758	91	280005	8.76	ppb		100
78) 1,3,5-Trimethylbenzene	10.692	105	317291	8.73	ppb		99
79) tert-Butylbenzene	11.056	119	273718	9.15	ppb		100
80) 1,2,4-Trimethylbenzene	11.120	105	310211	8.63	ppb		98
81) sec-Butylbenzene	11.301	105	361699	9.15	ppb		99
82) 1,3-Dichlorobenzene	11.482	146	168256	8.57	ppb		99
83) p-Isopropyltoluene	11.457	119	300486	8.13	ppb		99
84) 1,4-Dichlorobenzene	11.585	146	166788	8.46	ppb		99
85) 1,2,3-Trimethylbenzene	11.607	105	325971	9.35	ppb		100
86) p-Diethylbenzene	11.896	105	150329	8.01	ppb		91
87) 1,2-Dichlorobenzene	12.019	146	156207	9.04	ppb	#	100
88) n-Butylbenzene	11.927	91	239988m	6.83	ppb		
89) 1,2-Dibromo-3-chloropr...	12.942	75	9761	7.86	ppb		95
90) 1,2,4,5-Tetramethylben...	12.792	119	229935	7.37	ppb		99
91) 1,2,4-Trichlorobenzene	13.838	180	59680	6.47	ppb		98
92) Hexachloro-1,3-Butadiene	13.977	225	24997	6.31	ppb		99
93) Naphthalene	14.139	128	120586	7.24	ppb		99
94) 1,2,3-Trichlorobenzene	14.414	180	43374	6.78	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729640.D
Acq On : 31 Oct 2018 4:38 pm
InstName : MSVOA7
Operator : SS
Sample : BJ81730-MS1
Misc : QBV7103118A 18J1263-01 D
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 01 12:41:36 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729641.D
Acq On : 31 Oct 2018 5:10 pm
InstName : MSVOA7
Operator : SS
Sample : BJ81730-MSD1
Misc : QBV7103118A 18J1263-01 M
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 01 12:41:57 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	65200	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	250772	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	96372	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.684	65	78676	11.04	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 110.40%				
51) Toluene-d8 (SURR)	7.486	98	328074	9.57	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.70%				
70) p-Bromofluorobenzene (...	10.269	95	121257	9.82	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 98.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	62956	9.14	ppb		100
3) Chloromethane	1.763	50	84870	7.64	ppb		99
4) Vinyl Chloride	1.875	62	139769	14.38	ppb		100
5) Bromomethane	2.242	94	31783	5.50	ppb		100
6) Chloroethane	2.350	64	70507	12.43	ppb		100
7) Trichlorofluoromethane	2.592	101	150699	13.36	ppb		100
9) Freon-113	3.107	101	63433	8.45	ppb		99
10) 1,1-Dichloroethylene	3.143	61	129863	9.65	ppb		95
11) Acrolein	3.096	56	7593	11.60	ppb		95
12) Acetone	3.260	43	15275	6.66	ppb	#	100
13) Iodomethane	3.324	142	38415	3.50	ppb		99
14) Methyl Acetate	3.552	43	39719	8.77	ppb		98
15) Carbon disulfide	3.371	76	235637	9.61	ppb		100
16) tert-Butyl Alcohol (TBA)	3.800	59	29991	64.50	ppb	#	100
17) Methylene Chloride	3.672	49	117409	8.93	ppb		85
18) Acrylonitrile	3.956	53	18736	10.67	ppb	#	67
19) trans-1,2-Dichloroethy...	3.903	61	129579	9.65	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.875	73	243036	11.09	ppb		98
21) 1,1-Dichloroethane	4.331	63	174918	10.54	ppb		99
22) Vinyl Acetate	4.359	43	135197	7.97	ppb	#	100
23) Diisopropyl ether (DIPE)	4.315	45	299527	9.11	ppb		97
24) Ethyl-tert-Butyl ether...	4.660	59	292189	9.87	ppb	#	97
25) cis-1,2-Dichloroethylene	4.893	61	370913	24.52	ppb		92
26) 2-Butanone	4.916	72	9474	13.85	ppb	#	100
27) 2,2-Dichloropropane	4.863	77	134003	10.33	ppb	#	86
28) Tetrahydrofuran	5.160	71	7230	11.02	ppb	#	1
29) Bromochloromethane	5.135	49	75064	10.11	ppb		88
30) Chloroform	5.199	83	174073	11.47	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	159312	11.55	ppb	#	100
32) Cyclohexane	5.344	56	143741	9.32	ppb		90
33) 1,1-Dichloropropylene	5.483	75	120767	9.69	ppb		88
35) Carbon Tetrachloride	5.475	117	136679	11.22	ppb		100
36) tert-Amyl alcohol (TAA)	5.717	59	66396	113.20	ppb	#	78
37) 1,2-Dichloroethane	5.759	62	117769	11.66	ppb		99
38) Benzene	5.695	78	387216	11.11	ppb	#	75
39) tert-Amyl methyl ether...	5.745	73	308160	11.23	ppb	#	99
41) Trichloroethylene	6.301	95	120219	11.30	ppb		98
42) Methyl Cyclohexane	6.432	83	106913	7.41	ppb		87
43) Methyl Methacrylate	6.613	69	52437	10.23	ppb	#	26
44) Dibromomethane	6.696	93	50391	10.60	ppb	#	70
45) Bromodichloromethane	6.835	83	125282	10.12	ppb		98
46) 1,2-Dichloropropane	6.552	63	92601	9.18	ppb		98
47) 1,4-Dioxane	6.688	88	2907	311.55	ppb		99
48) 2-Chloroethyl vinyl ether	7.553	63	36022	8.02	ppb	#	91
49) cis-1,3-Dichloropropene	7.253	75	141693	9.32	ppb		95
50) 4-Methyl-2-Pentanone	7.383	43	68775	8.56	ppb		93
52) Toluene	7.553	91	416767	10.19	ppb		100
53) trans-1,3-Dichloropropene	7.820	75	125251	9.32	ppb		100

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729641.D
Acq On : 31 Oct 2018 5:10 pm
InstName : MSVOA7
Operator : SS
Sample : BJ81730-MSD1
Misc : QBV7103118A 18J1263-01 M
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 01 12:41:57 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

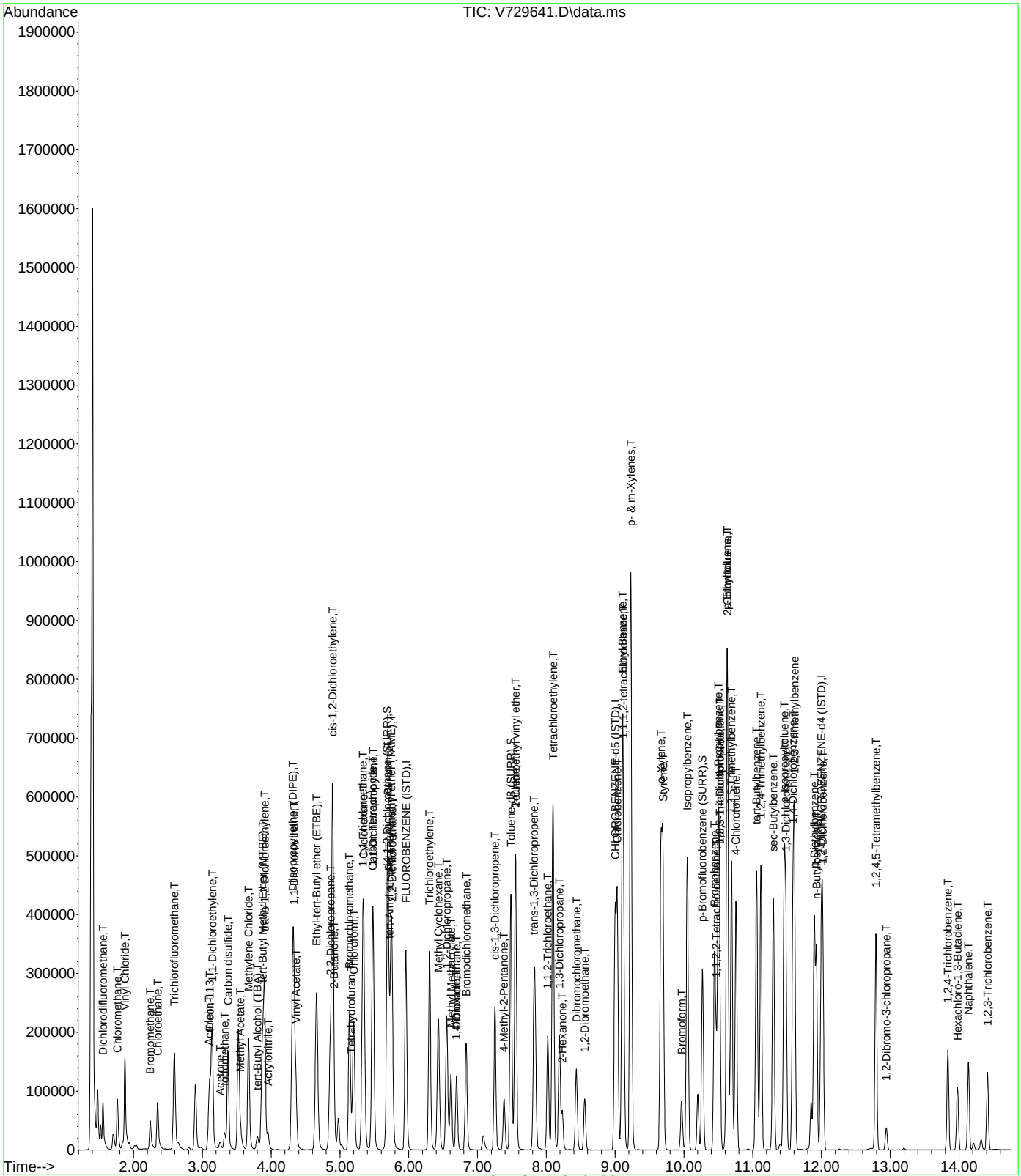
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
54) 1,1,2-Trichloroethane	8.021	97	68909	10.21	ppb		98
55) 1,3-Dichloropropane	8.190	76	121814	10.35	ppb	#	100
56) Tetrachloroethylene	8.098	166	197721	14.31	ppb	#	100
57) 2-Hexanone	8.232	43	49086	8.38	ppb		91
58) Dibromochloromethane	8.438	129	82828	9.71	ppb		98
59) 1,2-Dibromoethane	8.558	107	67115	10.08	ppb		98
60) Chlorobenzene	9.031	112	252901	9.72	ppb		98
61) 1,1,1,2-tetrachloroethane	9.120	131	97446	10.24	ppb		100
62) Ethyl Benzene	9.108	91	450780	9.94	ppb		100
63) p- & m-Xylenes	9.228	91	681838	16.38	ppb		99
64) o-Xylene	9.668	91	356468	10.12	ppb		100
65) Styrene	9.695	104	271661	9.55	ppb	#	100
66) Bromoform	9.968	173	45954	9.05	ppb	#	100
68) p-Ethyltoluene	10.628	105	372101	8.63	ppb	#	87
69) Isopropylbenzene	10.049	105	409733	9.06	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.469	83	84947	10.73	ppb	#	100
72) Bromobenzene	10.444	77	161715	9.56	ppb		95
73) trans-1,4-Dichloro-2-b...	10.519	75	89966	9.61	ppb		87
74) 1,2,3-Trichloropropane	10.519	110	24392	10.69	ppb		81
75) n-Propylbenzene	10.502	91	455860	8.77	ppb		100
76) 2-Chlorotoluene	10.633	91	335275	9.41	ppb		100
77) 4-Chlorotoluene	10.756	91	290507	8.92	ppb		99
78) 1,3,5-Trimethylbenzene	10.692	105	326816	8.83	ppb		99
79) tert-Butylbenzene	11.056	119	286895	9.42	ppb		99
80) 1,2,4-Trimethylbenzene	11.120	105	320370	8.76	ppb		98
81) sec-Butylbenzene	11.301	105	369154	9.17	ppb		100
82) 1,3-Dichlorobenzene	11.482	146	173143	8.66	ppb		99
83) p-Isopropyltoluene	11.459	119	300571	7.99	ppb		99
84) 1,4-Dichlorobenzene	11.585	146	173898	8.66	ppb		98
85) 1,2,3-Trimethylbenzene	11.607	105	341762	9.63	ppb		99
86) p-Diethylbenzene	11.896	105	147000	7.70	ppb		91
87) 1,2-Dichlorobenzene	12.019	146	164218	9.34	ppb	#	100
88) n-Butylbenzene	11.927	91	222263m	6.21	ppb		
89) 1,2-Dibromo-3-chloropr...	12.942	75	10832	8.57	ppb		95
90) 1,2,4,5-Tetramethylben...	12.792	119	236284	7.44	ppb		99
91) 1,2,4-Trichlorobenzene	13.838	180	60914	6.48	ppb		98
92) Hexachloro-1,3-Butadiene	13.977	225	25036	6.21	ppb		98
93) Naphthalene	14.136	128	131422	7.75	ppb		100
94) 1,2,3-Trichlorobenzene	14.414	180	44608	6.85	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729641.D
Acq On : 31 Oct 2018 5:10 pm
InstName : MSVOA7
Operator : SS
Sample : BJ81730-MSD1
Misc : QBV7103118A 18J1263-01 M
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 01 12:41:57 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



LCS RAW DATA

SDG: 18J1263
CLASS: VOA
METHOD: EPA 8260C

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729629.D
Acq On : 31 Oct 2018 10:49 am
InstName : MSVOA7
Operator : SS
Sample : BJ81730-BS1
Misc : QBV7103118A
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 11:37:48 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	67567	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	257396	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	103547	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	80674	10.93	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 109.30%				
51) Toluene-d8 (SURR)	7.484	98	338744	9.62	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.20%				
70) p-Bromofluorobenzene (...	10.269	95	123150	9.28	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 92.80%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	113040	15.84	ppb		100
3) Chloromethane	1.766	50	100914	8.76	ppb		98
4) Vinyl Chloride	1.872	62	122265	12.14	ppb		100
5) Bromomethane	2.239	94	26347	4.40	ppb		98
6) Chloroethane	2.348	64	76525	13.02	ppb		100
7) Trichlorofluoromethane	2.590	101	180308	15.43	ppb		100
9) Freon-113	3.104	101	87551	11.25	ppb		99
10) 1,1-Dichloroethylene	3.141	61	143002	10.25	ppb		89
11) Acrolein	3.096	56	9200	13.57	ppb		94
12) Acetone	3.257	43	19301	8.12	ppb	#	100
13) Iodomethane	3.321	142	32756	2.88	ppb		99
14) Methyl Acetate	3.552	43	43768	9.33	ppb		98
15) Carbon disulfide	3.369	76	262601	10.34	ppb		100
16) tert-Butyl Alcohol (TBA)	3.803	59	29720	61.68	ppb	#	100
17) Methylene Chloride	3.669	49	123678	9.08	ppb		85
18) Acrylonitrile	3.953	53	18965	10.42	ppb	#	67
19) trans-1,2-Dichloroethy...	3.903	61	141322	10.15	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.875	73	252071	11.10	ppb		98
21) 1,1-Dichloroethane	4.331	63	182705	10.62	ppb		99
22) Vinyl Acetate	4.359	43	144181	8.21	ppb	#	100
23) Diisopropyl ether (DIPE)	4.315	45	318680	9.35	ppb		97
24) Ethyl-tert-Butyl ether...	4.660	59	307259	10.01	ppb	#	97
25) cis-1,2-Dichloroethylene	4.893	61	165139	10.54	ppb		96
26) 2-Butanone	4.916	72	8860	12.50	ppb	#	100
27) 2,2-Dichloropropane	4.860	77	154650	11.50	ppb	#	86
28) Tetrahydrofuran	5.160	71	7446	10.95	ppb	#	1
29) Bromochloromethane	5.135	49	76548	9.95	ppb	#	87
30) Chloroform	5.199	83	178052	11.32	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	163262	11.43	ppb	#	100
32) Cyclohexane	5.344	56	166847	10.44	ppb		90
33) 1,1-Dichloropropylene	5.480	75	140581	10.88	ppb		95
35) Carbon Tetrachloride	5.472	117	143841	11.39	ppb		100
36) tert-Amyl alcohol (TAA)	5.717	59	66914	110.09	ppb	#	78
37) 1,2-Dichloroethane	5.756	62	120720	11.53	ppb		99
38) Benzene	5.695	78	410254	11.36	ppb	#	75
39) tert-Amyl methyl ether...	5.745	73	320070	11.25	ppb	#	99
41) Trichloroethylene	6.304	95	107579	9.85	ppb		98
42) Methyl Cyclohexane	6.429	83	152972	10.33	ppb		87
43) Methyl Methacrylate	6.613	69	52570	9.99	ppb	#	86
44) Dibromomethane	6.693	93	51135	10.48	ppb		98
45) Bromodichloromethane	6.835	83	128240	10.09	ppb		98
46) 1,2-Dichloropropane	6.552	63	97125	9.38	ppb		98
47) 1,4-Dioxane	6.696	88	2636	275.23	ppb		97
48) 2-Chloroethyl vinyl ether	7.091	63	28124	6.10	ppb		99
49) cis-1,3-Dichloropropene	7.253	75	150487	9.65	ppb		96
50) 4-Methyl-2-Pentanone	7.386	43	69373	8.41	ppb		95
52) Toluene	7.553	91	449122	10.70	ppb		100
53) trans-1,3-Dichloropropene	7.820	75	130792	9.49	ppb		100

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729629.D
Acq On : 31 Oct 2018 10:49 am
InstName : MSVOA7
Operator : SS
Sample : BJ81730-BS1
Misc : QBV7103118A
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 11:37:48 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

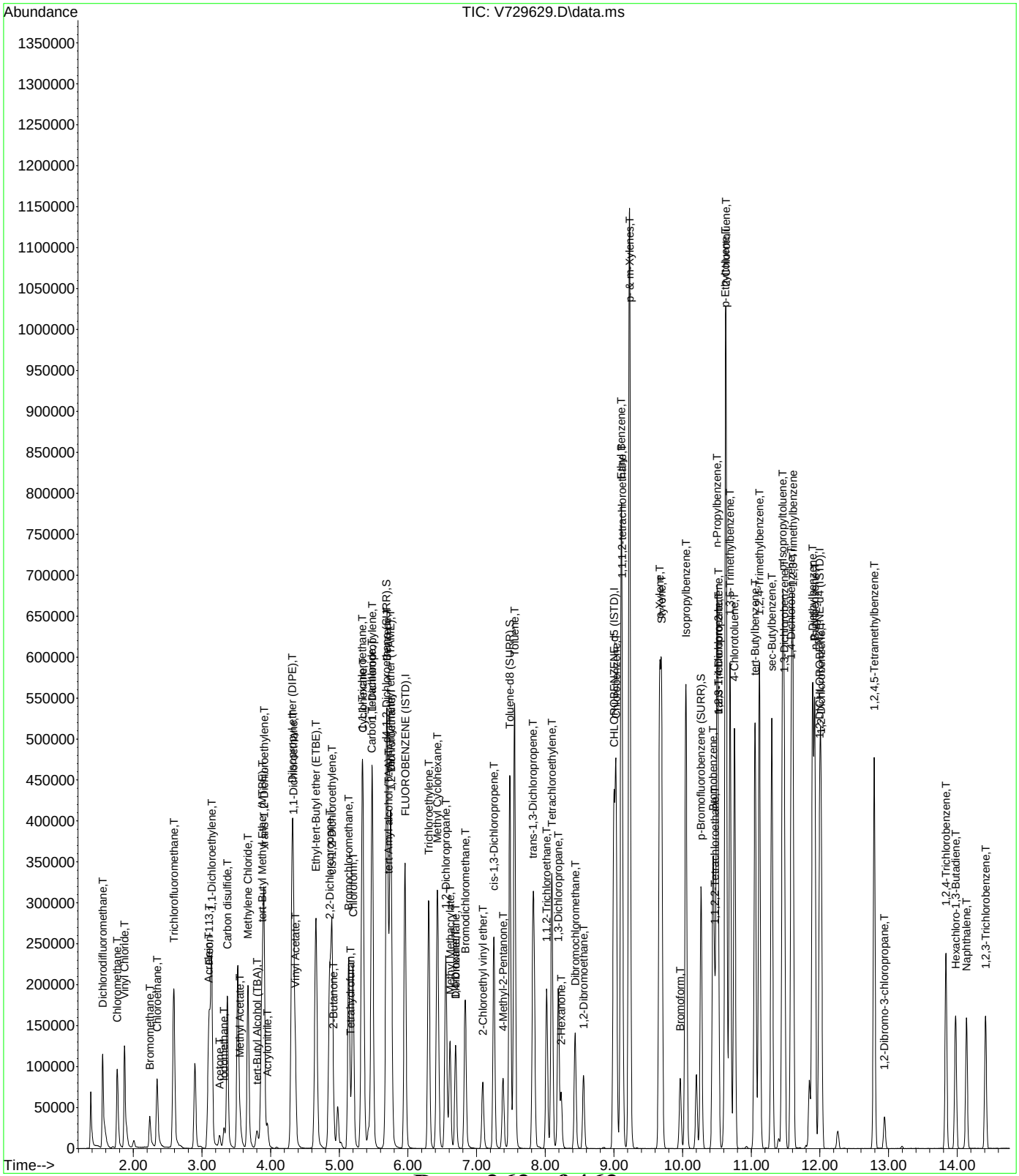
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
54) 1,1,2-Trichloroethane	8.021	97	69524	10.03	ppb		98
55) 1,3-Dichloropropane	8.190	76	120995	10.01	ppb	#	100
56) Tetrachloroethylene	8.096	166	111579	7.87	ppb	#	100
57) 2-Hexanone	8.232	43	49484	8.23	ppb		91
58) Dibromochloromethane	8.435	129	83265	9.51	ppb		98
59) 1,2-Dibromoethane	8.558	107	66976	9.80	ppb		98
60) Chlorobenzene	9.031	112	273131	10.23	ppb		98
61) 1,1,1,2-tetrachloroethane	9.120	131	98356	10.07	ppb		99
62) Ethyl Benzene	9.106	91	497105	10.68	ppb		100
63) p- & m-Xylenes	9.228	91	783405	18.33	ppb		99
64) o-Xylene	9.668	91	385192	10.65	ppb		100
65) Styrene	9.693	104	296566	10.16	ppb	#	100
66) Bromoform	9.965	173	46008	8.82	ppb	#	100
68) p-Ethyltoluene	10.625	105	466031	10.05	ppb	#	87
69) Isopropylbenzene	10.049	105	458151	9.43	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.469	83	84452	9.93	ppb	#	100
72) Bromobenzene	10.444	77	171068	9.41	ppb		95
73) trans-1,4-Dichloro-2-b...	10.519	75	91170	9.07	ppb		92
74) 1,2,3-Trichloropropane	10.519	110	23814	9.71	ppb		91
75) n-Propylbenzene	10.502	91	558382	10.00	ppb		100
76) 2-Chlorotoluene	10.633	91	388583	10.15	ppb		100
77) 4-Chlorotoluene	10.756	91	350669	10.03	ppb		100
78) 1,3,5-Trimethylbenzene	10.692	105	389266	9.79	ppb		99
79) tert-Butylbenzene	11.056	119	312661	9.56	ppb		100
80) 1,2,4-Trimethylbenzene	11.120	105	387257	9.85	ppb		98
81) sec-Butylbenzene	11.301	105	448198	10.36	ppb		100
82) 1,3-Dichlorobenzene	11.482	146	214568	9.99	ppb		99
83) p-Isopropyltoluene	11.457	119	397976	9.85	ppb		99
84) 1,4-Dichlorobenzene	11.582	146	213208	9.88	ppb		99
85) 1,2,3-Trimethylbenzene	11.607	105	388254	10.18	ppb		99
86) p-Diethylbenzene	11.893	105	216918	10.57	ppb		94
87) 1,2-Dichlorobenzene	12.019	146	188091	9.95	ppb	#	100
88) n-Butylbenzene	11.924	91	357983m	9.32	ppb		
89) 1,2-Dibromo-3-chloropr...	12.940	75	11368	8.37	ppb		97
90) 1,2,4,5-Tetramethylben...	12.792	119	300531	8.81	ppb		99
91) 1,2,4-Trichlorobenzene	13.835	180	84438	8.37	ppb		99
92) Hexachloro-1,3-Butadiene	13.977	225	38337	8.85	ppb		98
93) Naphthalene	14.136	128	144383	7.92	ppb		99
94) 1,2,3-Trichlorobenzene	14.414	180	57335	8.20	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729629.D
Acq On : 31 Oct 2018 10:49 am
InstName : MSVOA7
Operator : SS
Sample : BJ81730-BS1
Misc : QBV7103118A
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 31 11:37:48 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729630.D
Acq On : 31 Oct 2018 11:21 am
InstName : MSVOA7
Operator : SS
Sample : BJ81730-BSD1
Misc : QBV7103118A
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 31 11:38:17 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	68849	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	262072	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	103162	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	80898	10.75	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 107.50%				
51) Toluene-d8 (SURR)	7.486	98	343129	9.57	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.70%				
70) p-Bromofluorobenzene (...	10.269	95	126171	9.54	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.40%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	110426	15.18	ppb		100
3) Chloromethane	1.766	50	97814	8.33	ppb		98
4) Vinyl Chloride	1.872	62	118535	11.55	ppb		99
5) Bromomethane	2.239	94	29368	4.81	ppb		100
6) Chloroethane	2.347	64	74595	12.45	ppb		100
7) Trichlorofluoromethane	2.590	101	174219	14.63	ppb		100
9) Freon-113	3.104	101	85903	10.83	ppb		98
10) 1,1-Dichloroethylene	3.140	61	138432	9.74	ppb		88
11) Acrolein	3.096	56	9060	13.11	ppb		94
12) Acetone	3.254	43	19935	8.23	ppb	#	100
13) Iodomethane	3.321	142	32147	2.77	ppb		99
14) Methyl Acetate	3.555	43	43633	9.12	ppb		98
15) Carbon disulfide	3.369	76	255093	9.85	ppb		100
16) tert-Butyl Alcohol (TBA)	3.803	59	31839	64.85	ppb	#	100
17) Methylene Chloride	3.669	49	120360	8.67	ppb		85
18) Acrylonitrile	3.956	53	17661	9.53	ppb	#	67
19) trans-1,2-Dichloroethy...	3.903	61	138191	9.74	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.875	73	249682	10.79	ppb	#	91
21) 1,1-Dichloroethane	4.331	63	178443	10.18	ppb		99
22) Vinyl Acetate	4.359	43	139842	7.81	ppb	#	100
23) Diisopropyl ether (DIPE)	4.314	45	311604	8.97	ppb		97
24) Ethyl-tert-Butyl ether...	4.660	59	304006	9.72	ppb	#	97
25) cis-1,2-Dichloroethylene	4.893	61	161610	10.12	ppb		96
26) 2-Butanone	4.918	72	8621	11.94	ppb	#	100
27) 2,2-Dichloropropane	4.863	77	150158	10.96	ppb	#	100
28) Tetrahydrofuran	5.163	71	7480	10.79	ppb	#	1
29) Bromochloromethane	5.135	49	75040	9.57	ppb	#	87
30) Chloroform	5.199	83	174560	10.89	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	160714	11.04	ppb	#	99
32) Cyclohexane	5.344	56	161880	9.94	ppb		90
33) 1,1-Dichloropropylene	5.483	75	136843	10.39	ppb		95
35) Carbon Tetrachloride	5.472	117	140268	10.90	ppb		100
36) tert-Amyl alcohol (TAA)	5.717	59	70340	113.57	ppb	#	78
37) 1,2-Dichloroethane	5.756	62	119821	11.23	ppb		100
38) Benzene	5.694	78	401261	10.90	ppb	#	75
39) tert-Amyl methyl ether...	5.745	73	318994	11.01	ppb	#	99
41) Trichloroethylene	6.301	95	105854	9.52	ppb		98
42) Methyl Cyclohexane	6.432	83	148811	9.87	ppb		87
43) Methyl Methacrylate	6.615	69	51821	9.68	ppb	#	88
44) Dibromomethane	6.696	93	50070	10.08	ppb		97
45) Bromodichloromethane	6.835	83	126235	9.75	ppb		98
46) 1,2-Dichloropropane	6.551	63	94792	8.99	ppb		97
47) 1,4-Dioxane	6.688	88	3768	386.41	ppb	#	69
48) 2-Chloroethyl vinyl ether	7.094	63	28140	5.99	ppb		99
49) cis-1,3-Dichloropropene	7.253	75	147848	9.31	ppb		95
50) 4-Methyl-2-Pentanone	7.386	43	67665	8.05	ppb		93
52) Toluene	7.553	91	439189	10.28	ppb		100
53) trans-1,3-Dichloropropene	7.820	75	127919	9.11	ppb		100

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729630.D
Acq On : 31 Oct 2018 11:21 am
InstName : MSVOA7
Operator : SS
Sample : BJ81730-BSD1
Misc : QBV7103118A
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 31 11:38:17 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

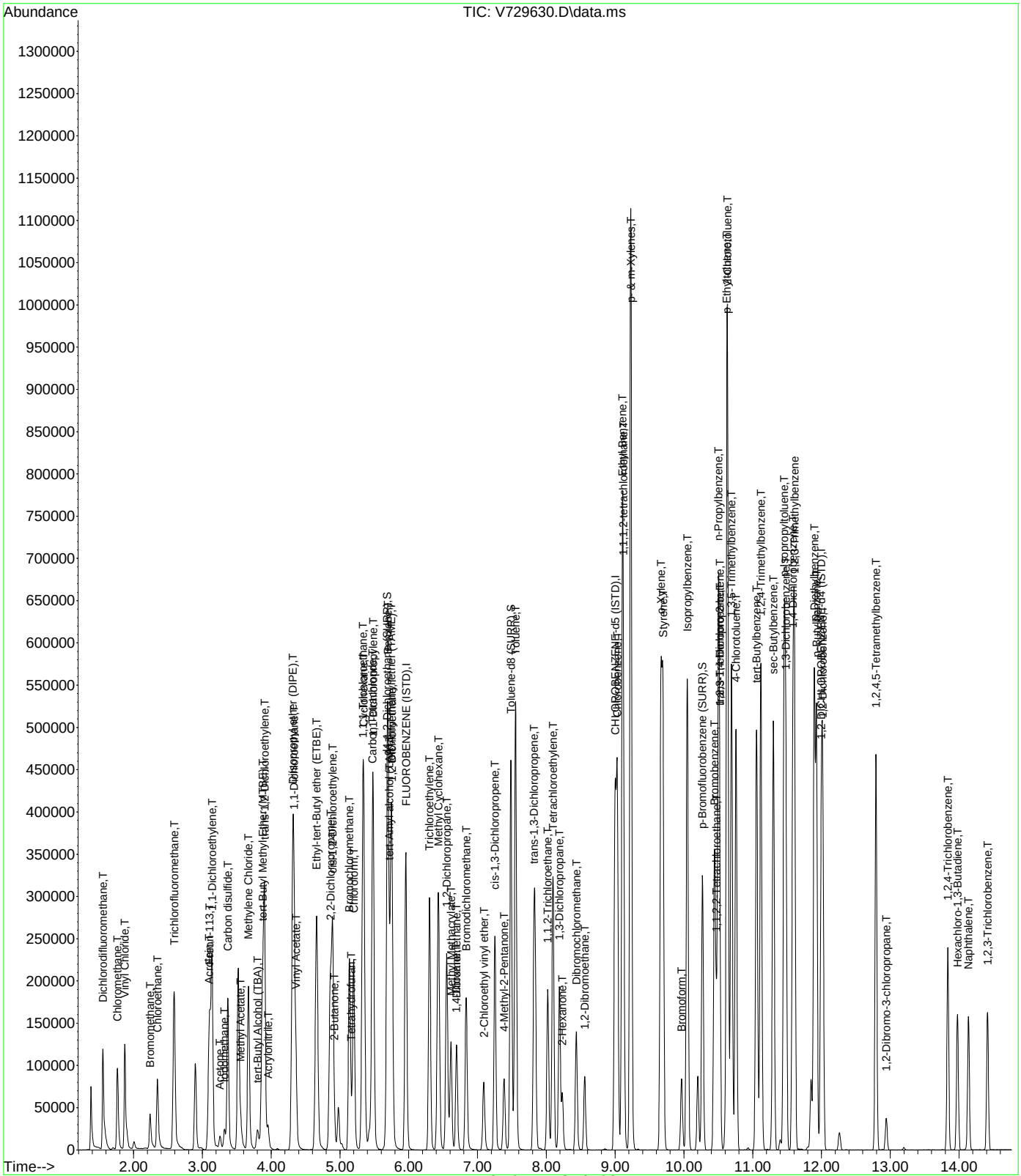
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
54) 1,1,2-Trichloroethane	8.020	97	67805	9.61	ppb		98
55) 1,3-Dichloropropane	8.190	76	120711	9.81	ppb	#	100
56) Tetrachloroethylene	8.096	166	109864	7.61	ppb	#	100
57) 2-Hexanone	8.232	43	49597	8.10	ppb		93
58) Dibromochloromethane	8.435	129	82332	9.23	ppb		98
59) 1,2-Dibromoethane	8.557	107	66369	9.54	ppb		98
60) Chlorobenzene	9.030	112	265349	9.76	ppb		98
61) 1,1,1,2-tetrachloroethane	9.119	131	97210	9.78	ppb		99
62) Ethyl Benzene	9.106	91	490485	10.35	ppb		100
63) p- & m-Xylenes	9.228	91	770414	17.70	ppb		99
64) o-Xylene	9.668	91	378337	10.27	ppb		100
65) Styrene	9.695	104	291517	9.81	ppb	#	100
66) Bromoform	9.965	173	44860	8.45	ppb	#	76
68) p-Ethyltoluene	10.625	105	457035	9.90	ppb	#	87
69) Isopropylbenzene	10.049	105	450336	9.31	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.472	83	81866	9.66	ppb	#	68
72) Bromobenzene	10.444	77	168597	9.31	ppb		94
73) trans-1,4-Dichloro-2-b...	10.519	75	88806	8.86	ppb		92
74) 1,2,3-Trichloropropane	10.519	110	23662	9.69	ppb		91
75) n-Propylbenzene	10.502	91	548506	9.86	ppb		100
76) 2-Chlorotoluene	10.633	91	381221	10.00	ppb		100
77) 4-Chlorotoluene	10.758	91	345471	9.91	ppb		100
78) 1,3,5-Trimethylbenzene	10.691	105	383614	9.68	ppb		99
79) tert-Butylbenzene	11.056	119	309447	9.49	ppb		99
80) 1,2,4-Trimethylbenzene	11.120	105	378599	9.67	ppb		98
81) sec-Butylbenzene	11.301	105	437456	10.15	ppb		99
82) 1,3-Dichlorobenzene	11.482	146	209759	9.80	ppb		99
83) p-Isopropyltoluene	11.457	119	390502	9.70	ppb		99
84) 1,4-Dichlorobenzene	11.584	146	210540	9.80	ppb		99
85) 1,2,3-Trimethylbenzene	11.607	105	381781	10.05	ppb		100
86) p-Diethylbenzene	11.896	105	212544	10.40	ppb		93
87) 1,2-Dichlorobenzene	12.019	146	183609	9.75	ppb	#	100
88) n-Butylbenzene	11.927	91	347310m	9.07	ppb		
89) 1,2-Dibromo-3-chloropr...	12.942	75	11201	8.28	ppb		96
90) 1,2,4,5-Tetramethylben...	12.792	119	293121	8.62	ppb		99
91) 1,2,4-Trichlorobenzene	13.838	180	83895	8.34	ppb		98
92) Hexachloro-1,3-Butadiene	13.977	225	36765	8.52	ppb		99
93) Naphthalene	14.136	128	144598	7.96	ppb		99
94) 1,2,3-Trichlorobenzene	14.414	180	57430	8.24	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7103118\
Data File : V729630.D
Acq On : 31 Oct 2018 11:21 am
InstName : MSVOA7
Operator : SS
Sample : BJ81730-BSD1
Misc : QBV7103118A
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 31 11:38:17 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



LCS RAW DATA

SDG: 18J1263
CLASS: VOA
METHOD: EPA 8260C

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729652.D
Acq On : 1 Nov 2018 10:44 am
InstName : MSVOA7
Operator : SS
Sample : BK80021-BS1
Misc : QBV7110118A
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 14:24:37 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	66467	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	254339	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	100365	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	77083	10.61	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.10%				
51) Toluene-d8 (SURR)	7.486	98	335425	9.64	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.40%				
70) p-Bromofluorobenzene (...	10.271	95	122626	9.54	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 95.40%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	94109	13.40	ppb		100
3) Chloromethane	1.766	50	92872	8.20	ppb		98
4) Vinyl Chloride	1.875	62	114023	11.50	ppb		100
5) Bromomethane	2.242	94	29866	5.07	ppb		98
6) Chloroethane	2.348	64	74759	12.93	ppb		100
7) Trichlorofluoromethane	2.592	101	174323	15.16	ppb		100
9) Freon-113	3.107	101	85440	11.16	ppb		99
10) 1,1-Dichloroethylene	3.140	61	137826	10.04	ppb		89
11) Acrolein	3.093	56	8931	13.39	ppb		94
12) Acetone	3.257	43	17622	7.54	ppb	#	100
13) Iodomethane	3.324	142	31669	2.83	ppb		99
14) Methyl Acetate	3.555	43	41335	8.95	ppb		98
15) Carbon disulfide	3.371	76	253201	10.13	ppb		100
16) tert-Butyl Alcohol (TBA)	3.803	59	28941	61.06	ppb	#	100
17) Methylene Chloride	3.672	49	117685	8.78	ppb		86
18) Acrylonitrile	3.953	53	16984	9.49	ppb	#	77
19) trans-1,2-Dichloroethy...	3.903	61	135590	9.90	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	238269	10.67	ppb		98
21) 1,1-Dichloroethane	4.331	63	175759	10.39	ppb		99
22) Vinyl Acetate	4.359	43	136038	7.87	ppb	#	100
23) Diisopropyl ether (DIPE)	4.315	45	306949	9.15	ppb		97
24) Ethyl-tert-Butyl ether...	4.660	59	293436	9.72	ppb	#	98
25) cis-1,2-Dichloroethylene	4.893	61	159724	10.36	ppb		96
26) 2-Butanone	4.918	72	8010	11.49	ppb	#	100
27) 2,2-Dichloropropane	4.863	77	150514	11.38	ppb	#	100
28) Tetrahydrofuran	5.160	71	6853	10.24	ppb	#	73
29) Bromochloromethane	5.135	49	73290	9.69	ppb		88
30) Chloroform	5.199	83	171118	11.06	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	159714	11.36	ppb	#	100
32) Cyclohexane	5.344	56	163837	10.42	ppb		90
33) 1,1-Dichloropropylene	5.483	75	137240	10.80	ppb		95
35) Carbon Tetrachloride	5.475	117	140949	11.35	ppb		100
36) tert-Amyl alcohol (TAA)	5.720	59	64480	107.84	ppb	#	78
37) 1,2-Dichloroethane	5.759	62	114530	11.12	ppb		100
38) Benzene	5.695	78	396266	11.15	ppb	#	75
39) tert-Amyl methyl ether...	5.745	73	304048	10.87	ppb	#	99
41) Trichloroethylene	6.304	95	104564	9.69	ppb		98
42) Methyl Cyclohexane	6.432	83	151528	10.35	ppb		87
43) Methyl Methacrylate	6.613	69	49199	9.46	ppb	#	87
44) Dibromomethane	6.693	93	48876	10.14	ppb		98
45) Bromodichloromethane	6.835	83	123960	9.87	ppb		98
46) 1,2-Dichloropropane	6.551	63	92780	9.07	ppb		98
47) 1,4-Dioxane	6.693	88	2841	300.20	ppb		98
48) 2-Chloroethyl vinyl ether	7.094	63	24453	5.37	ppb		99
49) cis-1,3-Dichloropropene	7.253	75	145457	9.44	ppb		95
50) 4-Methyl-2-Pentanone	7.386	43	64890	7.96	ppb		95
52) Toluene	7.553	91	438627	10.57	ppb		100
53) trans-1,3-Dichloropropene	7.820	75	124677	9.15	ppb		100

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729652.D
Acq On : 1 Nov 2018 10:44 am
InstName : MSVOA7
Operator : SS
Sample : BK80021-BS1
Misc : QBV7110118A
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 14:24:37 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

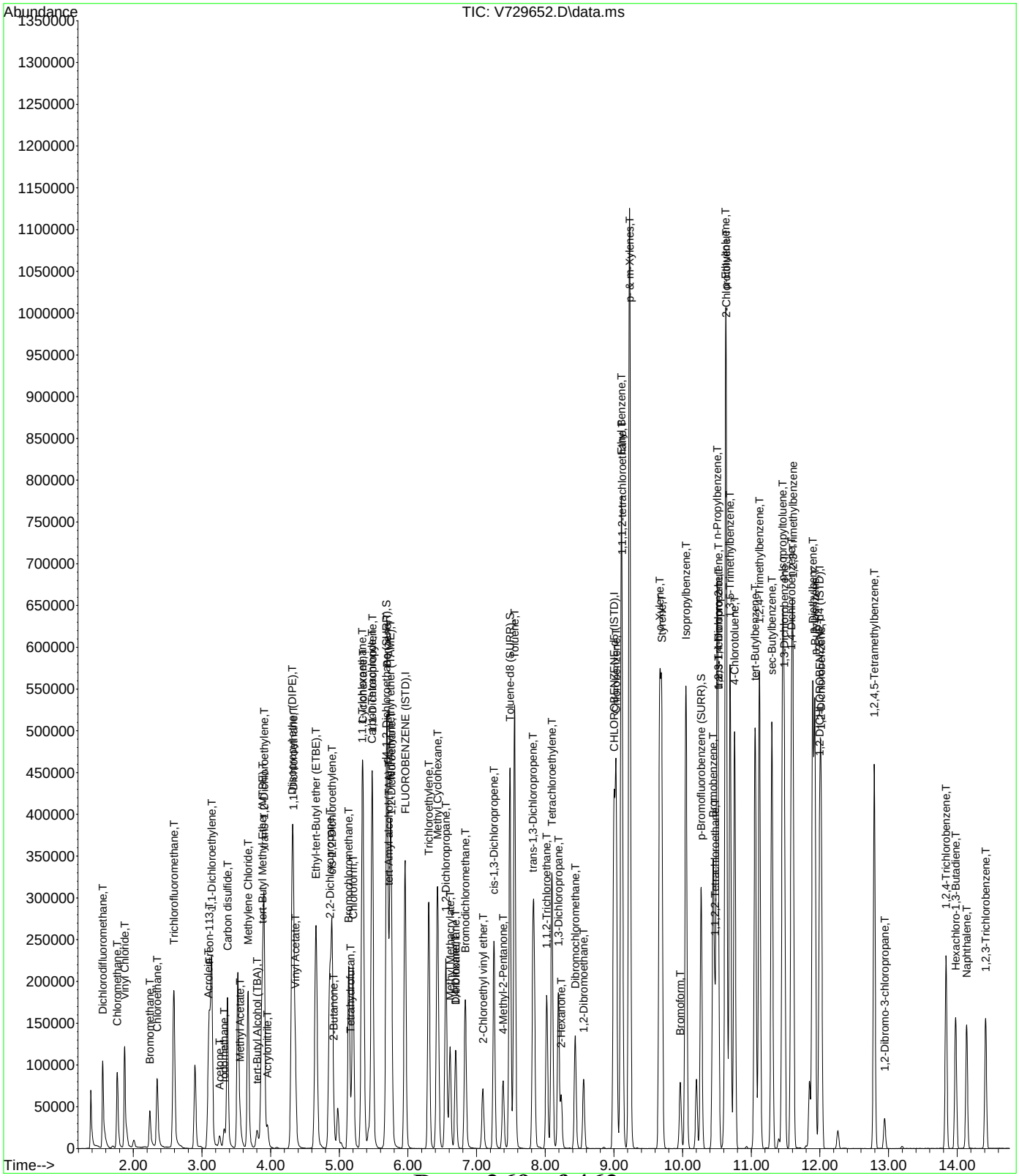
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
54) 1,1,2-Trichloroethane	8.021	97	66192	9.67	ppb		98
55) 1,3-Dichloropropane	8.193	76	116436	9.75	ppb	#	86
56) Tetrachloroethylene	8.096	166	109762	7.83	ppb	#	100
57) 2-Hexanone	8.232	43	47240	7.95	ppb		91
58) Dibromochloromethane	8.435	129	79645	9.20	ppb		98
59) 1,2-Dibromoethane	8.557	107	62833	9.31	ppb		99
60) Chlorobenzene	9.030	112	264528	10.03	ppb		99
61) 1,1,1,2-tetrachloroethane	9.120	131	96205	9.97	ppb		99
62) Ethyl Benzene	9.108	91	490702	10.67	ppb		100
63) p- & m-Xylenes	9.228	91	768098	18.19	ppb		99
64) o-Xylene	9.668	91	374785	10.49	ppb		100
65) Styrene	9.695	104	287034	9.95	ppb	#	100
66) Bromoform	9.965	173	43154	8.38	ppb	#	76
68) p-Ethyltoluene	10.627	105	461614	10.27	ppb	#	87
69) Isopropylbenzene	10.049	105	450981	9.58	ppb		99
71) 1,1,2,2-Tetrachloroethane	10.472	83	78332	9.50	ppb	#	100
72) Bromobenzene	10.444	77	165000	9.36	ppb		95
73) trans-1,4-Dichloro-2-b...	10.519	75	85305	8.75	ppb		92
74) 1,2,3-Trichloropropane	10.519	110	22688	9.55	ppb		92
75) n-Propylbenzene	10.505	91	552672	10.21	ppb		100
76) 2-Chlorotoluene	10.636	91	380790	10.27	ppb		100
77) 4-Chlorotoluene	10.758	91	341400	10.07	ppb		100
78) 1,3,5-Trimethylbenzene	10.691	105	380925	9.88	ppb		99
79) tert-Butylbenzene	11.056	119	307702	9.70	ppb		100
80) 1,2,4-Trimethylbenzene	11.120	105	378462	9.94	ppb		99
81) sec-Butylbenzene	11.301	105	441415	10.53	ppb		99
82) 1,3-Dichlorobenzene	11.482	146	206396	9.91	ppb		98
83) p-Isopropyltoluene	11.457	119	395036	10.09	ppb		99
84) 1,4-Dichlorobenzene	11.585	146	205873	9.85	ppb		99
85) 1,2,3-Trimethylbenzene	11.607	105	373944	10.12	ppb		100
86) p-Diethylbenzene	11.896	105	212345	10.68	ppb		94
87) 1,2-Dichlorobenzene	12.019	146	179807	9.82	ppb	#	100
88) n-Butylbenzene	11.927	91	351765m	9.44	ppb		
89) 1,2-Dibromo-3-chloropr...	12.945	75	10588	8.04	ppb	#	73
90) 1,2,4,5-Tetramethylben...	12.792	119	289750	8.76	ppb		99
91) 1,2,4-Trichlorobenzene	13.838	180	80333	8.21	ppb		99
92) Hexachloro-1,3-Butadiene	13.977	225	37308	8.89	ppb		99
93) Naphthalene	14.139	128	135416	7.67	ppb		99
94) 1,2,3-Trichlorobenzene	14.414	180	54173	7.99	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729652.D
Acq On : 1 Nov 2018 10:44 am
InstName : MSVOA7
Operator : SS
Sample : BK80021-BS1
Misc : QBV7110118A
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 01 14:24:37 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729653.D
Acq On : 1 Nov 2018 11:16 am
InstName : MSVOA7
Operator : SS
Sample : BK80021-BSD1
Misc : QBV7110118A
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 14:25:24 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) FLUOROBENZENE (ISTD)	5.959	70	68134	10.00	ppb	#	0.00
40) CHLOROBENZENE-d5 (ISTD)	9.000	117	256669	10.00	ppb		0.00
67) 1,2-DICHLOROBENZENE-d4...	11.996	152	102346	10.00	ppb		0.00
System Monitoring Compounds							
34) d4-1,2-Dichloroethane ...	5.683	65	79085	10.62	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 106.20%				
51) Toluene-d8 (SURR)	7.486	98	337426	9.61	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 96.10%				
70) p-Bromofluorobenzene (...	10.269	95	123318	9.40	ppb		0.00
Spiked Amount 10.000	Range 70 - 130		Recovery = 94.00%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.555	85	91591	12.73	ppb		100
3) Chloromethane	1.766	50	87495	7.53	ppb		98
4) Vinyl Chloride	1.872	62	111398	10.97	ppb		100
5) Bromomethane	2.242	94	28320	4.69	ppb		100
6) Chloroethane	2.348	64	72647	12.26	ppb		100
7) Trichlorofluoromethane	2.590	101	168052	14.26	ppb		100
9) Freon-113	3.104	101	82747	10.54	ppb		98
10) 1,1-Dichloroethylene	3.140	61	133573	9.49	ppb		89
11) Acrolein	3.096	56	9660	14.13	ppb		96
12) Acetone	3.257	43	19644	8.20	ppb	#	100
13) Iodomethane	3.321	142	26299	2.29	ppb		99
14) Methyl Acetate	3.555	43	43197	9.13	ppb		98
15) Carbon disulfide	3.371	76	244286	9.54	ppb		100
16) tert-Butyl Alcohol (TBA)	3.803	59	29617	60.96	ppb	#	100
17) Methylene Chloride	3.669	49	118912	8.65	ppb		85
18) Acrylonitrile	3.958	53	18468	10.07	ppb	#	67
19) trans-1,2-Dichloroethy...	3.906	61	133294	9.50	ppb	#	100
20) tert-Butyl Methyl Ethe...	3.878	73	247699	10.82	ppb		98
21) 1,1-Dichloroethane	4.331	63	174663	10.07	ppb		99
22) Vinyl Acetate	4.359	43	142200	8.03	ppb	#	100
23) Diisopropyl ether (DIPE)	4.315	45	310588	9.04	ppb		97
24) Ethyl-tert-Butyl ether...	4.662	59	302845	9.78	ppb	#	98
25) cis-1,2-Dichloroethylene	4.893	61	158431	10.02	ppb		95
26) 2-Butanone	4.918	72	8631	12.08	ppb	#	100
27) 2,2-Dichloropropane	4.863	77	146472	10.81	ppb	#	100
28) Tetrahydrofuran	5.160	71	7300	10.64	ppb	#	1
29) Bromochloromethane	5.135	49	75099	9.68	ppb		88
30) Chloroform	5.199	83	172484	10.87	ppb	#	100
31) 1,1,1-Trichloroethane	5.333	97	157434	10.93	ppb	#	99
32) Cyclohexane	5.344	56	159287	9.89	ppb		90
33) 1,1-Dichloropropylene	5.483	75	134581	10.33	ppb		96
35) Carbon Tetrachloride	5.472	117	137993	10.84	ppb		100
36) tert-Amyl alcohol (TAA)	5.720	59	66537	108.56	ppb	#	78
37) 1,2-Dichloroethane	5.756	62	119428	11.31	ppb		99
38) Benzene	5.695	78	392633	10.78	ppb	#	75
39) tert-Amyl methyl ether...	5.745	73	314435	10.96	ppb	#	99
41) Trichloroethylene	6.304	95	102702	9.43	ppb		97
42) Methyl Cyclohexane	6.432	83	146914	9.95	ppb		87
43) Methyl Methacrylate	6.615	69	52836	10.07	ppb	#	86
44) Dibromomethane	6.696	93	49946	10.26	ppb		97
45) Bromodichloromethane	6.835	83	125151	9.87	ppb		98
46) 1,2-Dichloropropane	6.554	63	93436	9.05	ppb	#	89
47) 1,4-Dioxane	6.691	88	2454	256.95	ppb		100
48) 2-Chloroethyl vinyl ether	7.091	63	28709	6.24	ppb		99
49) cis-1,3-Dichloropropene	7.253	75	146140	9.39	ppb		96
50) 4-Methyl-2-Pentanone	7.386	43	69152	8.41	ppb		93
52) Toluene	7.553	91	430307	10.28	ppb		100
53) trans-1,3-Dichloropropene	7.820	75	127430	9.27	ppb		100

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729653.D
Acq On : 1 Nov 2018 11:16 am
InstName : MSVOA7
Operator : SS
Sample : BK80021-BSD1
Misc : QBV7110118A
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 14:25:24 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration

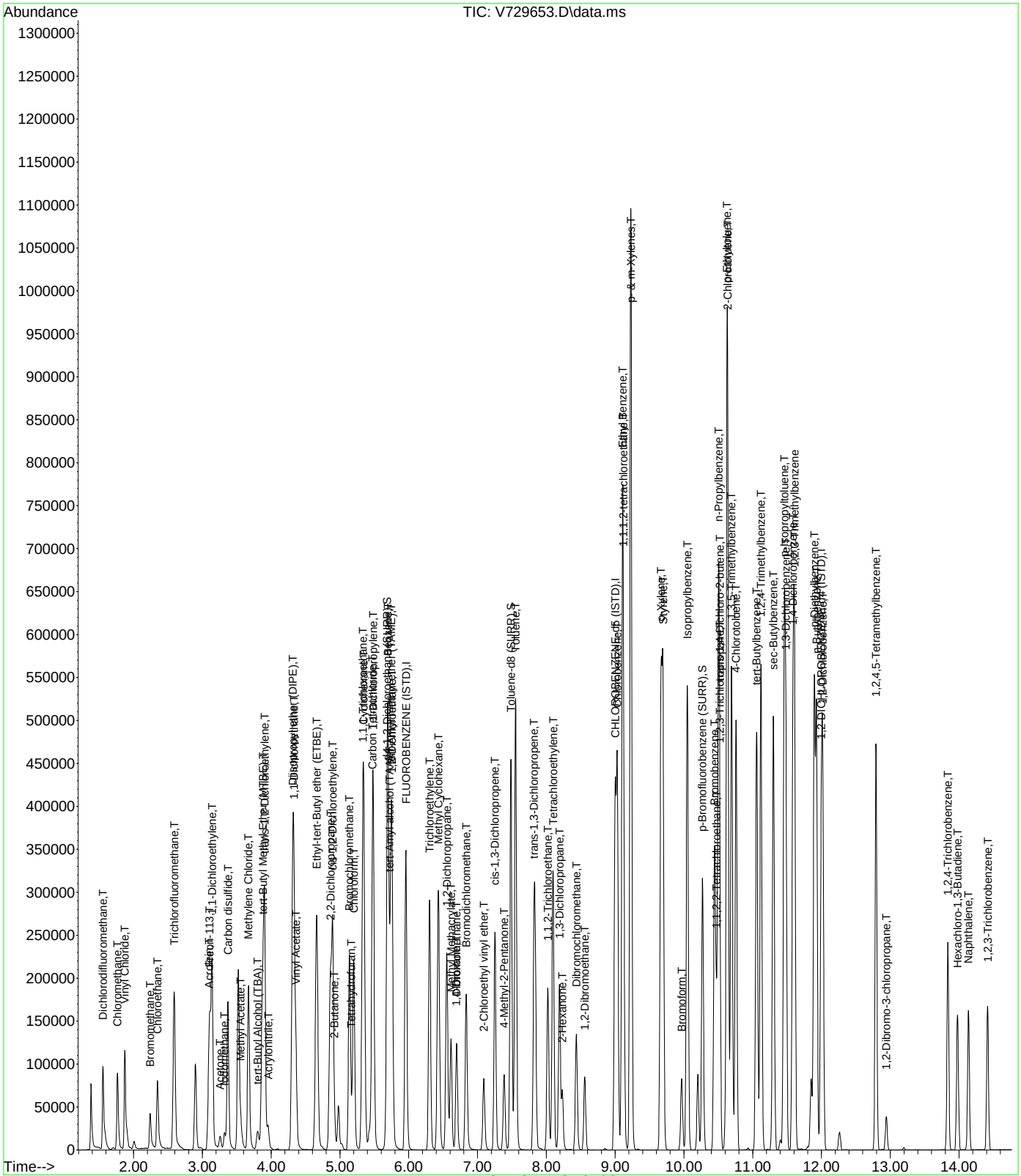
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
54) 1,1,2-Trichloroethane	8.023	97	68357	9.89	ppb		98
55) 1,3-Dichloropropane	8.193	76	120602	10.01	ppb	#	86
56) Tetrachloroethylene	8.098	166	107794	7.62	ppb	#	100
57) 2-Hexanone	8.232	43	50049	8.35	ppb		93
58) Dibromochloromethane	8.435	129	82289	9.42	ppb		99
59) 1,2-Dibromoethane	8.557	107	66115	9.70	ppb		98
60) Chlorobenzene	9.030	112	260721	9.79	ppb		99
61) 1,1,1,2-tetrachloroethane	9.119	131	95489	9.81	ppb		99
62) Ethyl Benzene	9.108	91	477938	10.30	ppb		100
63) p- & m-Xylenes	9.228	91	754237	17.70	ppb		99
64) o-Xylene	9.668	91	369723	10.25	ppb		100
65) Styrene	9.695	104	287873	9.89	ppb	#	100
66) Bromoform	9.968	173	45302	8.71	ppb	#	100
68) p-Ethyltoluene	10.627	105	450890	9.84	ppb	#	87
69) Isopropylbenzene	10.049	105	440041	9.17	ppb		100
71) 1,1,2,2-Tetrachloroethane	10.472	83	82343	9.80	ppb	#	100
72) Bromobenzene	10.444	77	165818	9.23	ppb		95
73) trans-1,4-Dichloro-2-b...	10.519	75	89633	9.02	ppb		91
74) 1,2,3-Trichloropropane	10.522	110	23978	9.90	ppb		90
75) n-Propylbenzene	10.505	91	535571	9.70	ppb		100
76) 2-Chlorotoluene	10.636	91	372521	9.85	ppb		100
77) 4-Chlorotoluene	10.758	91	339321	9.82	ppb		100
78) 1,3,5-Trimethylbenzene	10.691	105	372986	9.49	ppb		99
79) tert-Butylbenzene	11.056	119	300890	9.30	ppb		100
80) 1,2,4-Trimethylbenzene	11.120	105	371035	9.55	ppb		98
81) sec-Butylbenzene	11.301	105	432152	10.11	ppb		100
82) 1,3-Dichlorobenzene	11.482	146	207157	9.75	ppb		99
83) p-Isopropyltoluene	11.459	119	382573	9.58	ppb		99
84) 1,4-Dichlorobenzene	11.585	146	207336	9.72	ppb		99
85) 1,2,3-Trimethylbenzene	11.607	105	375508	9.96	ppb		99
86) p-Diethylbenzene	11.896	105	209599	10.34	ppb		93
87) 1,2-Dichlorobenzene	12.019	146	183671	9.83	ppb	#	68
88) n-Butylbenzene	11.927	91	345498m	9.10	ppb		
89) 1,2-Dibromo-3-chloropr...	12.942	75	11357	8.46	ppb		96
90) 1,2,4,5-Tetramethylben...	12.792	119	292460	8.67	ppb		100
91) 1,2,4-Trichlorobenzene	13.838	180	84260	8.45	ppb		99
92) Hexachloro-1,3-Butadiene	13.977	225	37288	8.71	ppb		99
93) Naphthalene	14.136	128	148796	8.26	ppb		100
94) 1,2,3-Trichlorobenzene	14.417	180	59474	8.60	ppb		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\V7110118\
Data File : V729653.D
Acq On : 1 Nov 2018 11:16 am
InstName : MSVOA7
Operator : SS
Sample : BK80021-BSD1
Misc : QBV7110118A
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 01 14:25:24 2018
Quant Method : C:\msdchem\1\methods\V7LO0120.M
Quant Title : Volatile Organics EPA 8260C
QLast Update : Tue Sep 18 15:18:53 2018
Response via : Initial Calibration



BENCHSHEETS

SDG: 18J1263

CLASS: VOA

METHOD: EPA 8260C

PREPARATION BENCH SHEET-AQUEOUS: BJ81730

Prepared: **10/31/2018 07:30**

York Analytical Laboratories, Inc.

Printed: 11/5/2018 10:42:03AM

Matrix: Water **Preparation EPA 5030B** **Surrogate used: Y15L025** **1** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data Initial	pH Data Acid	pH Data Basic	Decanted Y/N	Comments
18J1251-01 D	Volatile Organics, 1	25	25							<2	NA		
18J1251-01 D	Volatile Organics, (	25	25							<2	NA		
18J1258-01 A	Volatile Organics, 1	25	25							<2	NA		1x analysis required to meet permit levels
18J1263-01 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1263-01 A	Volatile Organics, 8	25	25							<2	NA		Added for BatchQC in: BJ81730
18J1263-01 A	Volatile Organics, (	25	25							<2	NA		Added for BatchQC in: BJ81730
18J1263-01 A	Volatile Organics, 1	25	25							<2	NA		Added for BatchQC in: BJ81730
18J1263-01 A	Volatile Organics, 1	25	25							<2	NA		Added for BatchQC in: BJ81730
18J1263-02 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1263-03 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1263-04 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1263-05 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1263-06 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1263-07 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1263-08 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1287-05 A	Volatile Organics, 8	25	25							<2	NA		
18J1287-06 A	Volatile Organics, 8	25	25							<2	NA		
18J1287-07 A	Volatile Organics, 8	25	25							<2	NA		
18J1469-05 A	VOA, 8260 LOW M	25	25							<2	NA		LOG for WATER
BJ81730-BLK1	QC	25	25								NA		
BJ81730-BS1	QC	25	25	Y18J166	5						NA		
BJ81730-BSD1	QC	25	25	Y18J166	5						NA		
BJ81730-MS1	QC	25	25	Y18J166	5			18J1263-01		<2	NA		
BJ81730-MSD1	QC	25	25	Y18J166	5			18J1263-01		<2	NA		

Reagents:

ID Number	Description	Lot Number	ID Number	Description	Lot Number

Preparation Performed by **RDS** **Date:** **10/31/2018 07:30**

BENCHSHEETS

SDG: 18J1263

CLASS: VOA

METHOD: EPA 8260C

PREPARATION BENCH SHEET-AQUEOUS: BK80021

Prepared: **11/01/2018 07:30**

York Analytical Laboratories, Inc.

Printed: 11/5/2018 10:41:45AM

Matrix: Water **Preparation EPA 5030B** **Surrogate used: Y15L025** **1** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data Initial	pH Data Acid	pH Data Basic	Decanted Y/N	Comments
18J1263-09 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1263-10 A	VOA, 8260 LOW M	25	25							<2	NA		Log P375 vers for quarterly GW
18J1321-04 A	Volatile Organics, 8	25	25							<2	NA		
18J1326-01 A	Volatile Organics, (	25	25							<2	NA		
18J1326-02 A	Volatile Organics, (	25	25							<2	NA		
18J1326-03 C	Volatile Organics, (	25	25							<2	NA		
18J1326-04 A	Volatile Organics, (	25	25							<2	NA		Added for BatchQC in: BK80021
18J1326-04 A	VOA, 8260 LOW M	25	25							<2	NA		Added for BatchQC in: BK80021
18J1326-04 A	Volatile Organics, 8	25	25							<2	NA		Added for BatchQC in: BK80021
18J1326-04 A	Volatile Organics, (	25	25							<2	NA		
18J1326-05 A	Volatile Organics, (	25	25							<2	NA		
18J1326-06 A	Volatile Organics, (	25	25							<2	NA		
18J1345-01 A	VOA, 8260 LOW M	25	25							<2	NA		Log Waters
18J1345-04 A	VOA, 8260 LOW M	25	25							<2	NA		Log Waters
18J1479-01 A	Volatile Organics, (	25	25							<2	NA		
18J1479-02 A	Volatile Organics, (	25	25							<2	NA		
BK80021-BLK1	QC	25	25								NA		
BK80021-BS1	QC	25	25	Y18J166	5						NA		
BK80021-BSD1	QC	25	25	Y18J166	5						NA		
BK80021-MS1	QC	25	25	Y18J166	5			18J1326-04		<2	NA		
BK80021-MSD1	QC	25	25	Y18J166	5			18J1326-04		<2	NA		

Reagents:

ID Number	Description	Lot Number	ID Number	Description	Lot Number

Preparation Performed by **RDS** **Date:** **11/01/2018 07:30**

York Analytical Laboratories, Inc.
SDG: 18J1263
CLASS: METALS
METHOD: EPA 6010D

DATA PACKAGE COVER PAGE

EPA 6010D

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Client Sample Id:	Lab Sample Id:
MW16_102518	18J1263-01
MW5_102518	18J1263-02
MW7_102518	18J1263-03
MW14_102518	18J1263-04
MW13_102518	18J1263-05
MW12_102518	18J1263-06
MW15_102518	18J1263-07
DUP01_102518	18J1263-08
FB01_102518	18J1263-10

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the project narrative. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the

Signature:  Name: Benjamin Gulizia

Date: 11/5/2018 Title: Laboratory Director

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010D

MW16_102518

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81616	Laboratory ID:	BJ81616-MS1
Preparation:	EPA 3015A	Initial/Final:	45 mL / 50 mL

Source Sample Name: MW16_102518

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC. #	QC LIMITS REC.
Iron (dissolved)	1.11	1.37	2.39	91.8	75 - 125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010D

MW16_102518

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81698	Laboratory ID:	BJ81698-MS1
Preparation:	EPA 3015A	Initial/Final:	45 mL / 50 mL

Source Sample Name: MW16_102518

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC. #	QC LIMITS REC.
Iron	1.11	6.57	7.44	78.2	75 - 125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

DUPLICATES

MW16_102518

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Matrix: Water
Laboratory ID: BJ81616-DUP1
Batch: BJ81616
Lab Source ID: 18J1263-01
Preparation: EPA 3015A
Initial/Final: 45 mL / 50 mL
Source Sample Name: MW16_102518
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q	METHOD
Iron (dissolved)	20	1.37		1.38		1.19		EPA 6010D

* Values outside of QC limits

DUPLICATES

MW16_102518

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Matrix: Water
Laboratory ID: BJ81698-DUP1
Batch: BJ81698
Lab Source ID: 18J1263-01
Preparation: EPA 3015A
Initial/Final: 45 mL / 50 mL
Source Sample Name: MW16_102518
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q	METHOD
Iron	20	6.57		6.46		1.75		EPA 6010D

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 6010D

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81616	Laboratory ID:	BJ81616-BS1
Preparation:	EPA 3015A	Initial/Final:	45 mL / 50 mL

COMPOUND	SPIKE ADDED (ug/mL)	LCS CONCENTRATION (ug/mL)	LCS % REC. #	QC LIMITS REC.
Iron (dissolved)	1.00	1.17	117	80 - 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 6010D

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81698	Laboratory ID:	BJ81698-BS1
Preparation:	EPA 3015A	Initial/Final:	45 mL / 50 mL

COMPOUND	SPIKE ADDED (ug/mL)	LCS CONCENTRATION (ug/mL)	LCS % REC. #	QC LIMITS REC.
Iron	1.00	1.06	106	80 - 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SERIAL DILUTION

EPA 6010D

MW16_102518

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Matrix: Water
Laboratory ID: Y8J3107-SRD1
Sequence: Y8J3107
Lab Source ID: 18J1263-01
Preparation: BJ81616
Initial/Final: 45 / 50
Source Sample Name: MW16_102518
% Solids:

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method	QC Limits % Difference
Iron (dissolved)	1.37		1.43		5.07		EPA 6010D	10

* Values outside of QC limits

SERIAL DILUTION

EPA 6010D

MW16_102518

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Matrix: Water
Laboratory ID: Y8K0102-SRD6
Sequence: Y8K0102
Lab Source ID: 18J1263-01
Preparation: BJ81698
Initial/Final: 45 / 50
Source Sample Name: MW16_102518
% Solids:

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method	QC Limits % Difference
Iron	6.57		8.18		24.6 *		EPA 6010D	10

* Values outside of QC limits

FORM IV **PREPARATION BATCH SUMMARY**

EPA 6010D

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Batch: BJ81616 Batch Matrix: Water Preparation: EPA 3015A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW16_102518	18J1263-01	qbi103018bRE_1-011	10/29/18 15:01	Lab to filter
MW5_102518	18J1263-02	qbi103018bRE_1-014	10/29/18 15:01	Lab to filter
MW7_102518	18J1263-03	qbi103018bRE_1-015	10/29/18 15:01	Lab to filter
MW14_102518	18J1263-04	qbi103018bRE_1-016	10/29/18 15:01	Lab to filter
MW13_102518	18J1263-05	qbi103018bRE_1-017	10/29/18 15:01	Lab to filter
MW12_102518	18J1263-06	qbi103018bRE_1-018	10/29/18 15:01	Lab to filter
MW15_102518	18J1263-07	qbi103018bRE_1-021	10/29/18 15:01	Lab to filter
DUP01_102518	18J1263-08	qbi103018bRE_1-022	10/29/18 15:01	Lab to filter
FB01_102518	18J1263-10	qbi103018bRE_1-023	10/29/18 15:01	Lab to filter
Blank	BJ81616-BLK1	qbi103018bRE_1-009	10/29/18 15:01	
LCS	BJ81616-BS1	qbi103018bRE_1-010	10/29/18 15:01	
MW16_102518	BJ81616-DUP1	qbi103018bRE_1-012	10/29/18 15:01	
MW16_102518	BJ81616-MS1	qbi103018bRE_1-013	10/29/18 15:01	

FORM IV **PREPARATION BATCH SUMMARY**

EPA 6010D

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Batch: BJ81698 Batch Matrix: Water Preparation: EPA 3015A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW16_102518	18J1263-01	qbi103118aRE_1-122	10/30/18 16:02	
MW5_102518	18J1263-02	qbi103118aRE_1-125	10/30/18 16:02	
MW7_102518	18J1263-03	qbi103118aRE_1-126	10/30/18 16:02	
MW14_102518	18J1263-04	qbi103118aRE_1-129	10/30/18 16:02	
MW13_102518	18J1263-05	qbi103118aRE_1-130	10/30/18 16:02	
MW12_102518	18J1263-06	qbi103118aRE_1-131	10/30/18 16:02	
MW15_102518	18J1263-07	qbi103118aRE_1-132	10/30/18 16:02	
DUP01_102518	18J1263-08	qbi103118aRE_1-133	10/30/18 16:02	
FB01_102518	18J1263-10	qbi103118aRE_1-134	10/30/18 16:02	
Blank	BJ81698-BLK1	qbi103118aRE_1-119	10/30/18 16:02	
LCS	BJ81698-BS1	qbi103118aRE_1-120	10/30/18 16:02	
MW16_102518	BJ81698-DUP1	qbi103118aRE_1-123	10/30/18 16:02	
MW16_102518	BJ81698-MS1	qbi103118aRE_1-124	10/30/18 16:02	

FORM I **BLANKS**

EPA 6010D

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC

Instrument ID: WinLabICP Project: 170264501

Sequence: Y8J3107 Calibration: 10/30/18 1

Lab Sample ID	Analyte	Found	MRL	Units	C	Method
Y8J3107-ICB1	Iron (dissolved)	-0.0107	0.250	ug/mL		EPA 6010D
Y8J3107-CCB1	Iron (dissolved)	-0.0164	0.250	ug/mL		EPA 6010D
BJ81616-BLK1	Iron (dissolved)	0.0308	0.278	mg/L		EPA 6010D
Y8J3107-CCB2	Iron (dissolved)	0.00239	0.250	ug/mL		EPA 6010D
Y8J3107-CCB3	Iron (dissolved)	-0.00802	0.250	ug/mL		EPA 6010D

FORM I **BLANKS**

EPA 6010D

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC

Instrument ID: WinLabICP Project: 170264501

Sequence: Y8K0102 Calibration: 10/31/18 1

Lab Sample ID	Analyte	Found	MRL	Units	C	Method
Y8K0102-ICB1	Iron	-0.00683	0.250	ug/mL		EPA 6010D
Y8K0102-CCB1	Iron	-0.00526	0.250	ug/mL		EPA 6010D
Y8K0102-CCBA	Iron	0.0145	0.250	ug/mL		EPA 6010D
BJ81698-BLK1	Iron	-0.00441	0.278	mg/L		EPA 6010D
Y8K0102-CCBB	Iron	0.00763	0.250	ug/mL		EPA 6010D
Y8K0102-CCBC	Iron	0.0104	0.250	ug/mL		EPA 6010D

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Sequence: Y8J3107
Instrument: WinLabICP
Calibration: UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Check	Y8J3107-ICV1	qbi103018bRE_1-001	10/30/18 17:16
Initial Cal Blank	Y8J3107-ICB1	qbi103018bRE_1-002	10/30/18 17:19
Instrument RL Check	Y8J3107-CRL1	qbi103018bRE_1-003	10/30/18 17:21
Interference Check A	Y8J3107-IFA1	qbi103018bRE_1-005	10/30/18 17:26
Interference Check B	Y8J3107-IFB1	qbi103018bRE_1-006	10/30/18 17:29
Calibration Check	Y8J3107-CCV1	qbi103018bRE_1-007	10/30/18 17:31
Calibration Blank	Y8J3107-CCB1	qbi103018bRE_1-008	10/30/18 17:33
Blank	BJ81616-BLK1	qbi103018bRE_1-009	10/30/18 17:36
LCS	BJ81616-BS1	qbi103018bRE_1-010	10/30/18 17:38
MW16_102518	18J1263-01	qbi103018bRE_1-011	10/30/18 17:41
MW16_102518	BJ81616-DUP1	qbi103018bRE_1-012	10/30/18 17:43
MW16_102518	BJ81616-MS1	qbi103018bRE_1-013	10/30/18 17:46
MW5_102518	18J1263-02	qbi103018bRE_1-014	10/30/18 17:48
MW7_102518	18J1263-03	qbi103018bRE_1-015	10/30/18 17:51
MW14_102518	18J1263-04	qbi103018bRE_1-016	10/30/18 17:54
MW13_102518	18J1263-05	qbi103018bRE_1-017	10/30/18 17:56
MW12_102518	18J1263-06	qbi103018bRE_1-018	10/30/18 17:59
Calibration Check	Y8J3107-CCV2	qbi103018bRE_1-019	10/30/18 18:01
Calibration Blank	Y8J3107-CCB2	qbi103018bRE_1-020	10/30/18 18:04
MW15_102518	18J1263-07	qbi103018bRE_1-021	10/30/18 18:06
DUP01_102518	18J1263-08	qbi103018bRE_1-022	10/30/18 18:09
FB01_102518	18J1263-10	qbi103018bRE_1-023	10/30/18 18:11
MW16_102518	Y8J3107-SRD1	qbi103018bRE_1-027	10/30/18 18:20
Calibration Check	Y8J3107-CCV3	qbi103018bRE_1-031	10/30/18 18:29
Calibration Blank	Y8J3107-CCB3	qbi103018bRE_1-032	10/30/18 18:32

FORM V

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010D

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Sequence:	Y8K0102	Instrument:	WinLabICP
		Calibration:	UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Initial Cal Check	Y8K0102-ICV1	qbi103118aRE_1-001	10/31/18 11:28
Initial Cal Blank	Y8K0102-ICB1	qbi103118aRE_1-002	10/31/18 11:30
Instrument RL Check	Y8K0102-CRL1	qbi103118aRE_1-003	10/31/18 11:33
Interference Check A	Y8K0102-IFA1	qbi103118aRE_1-005	10/31/18 11:38
Interference Check B	Y8K0102-IFB1	qbi103118aRE_1-006	10/31/18 11:40
Calibration Check	Y8K0102-CCV1	qbi103118aRE_1-007	10/31/18 11:42
Calibration Blank	Y8K0102-CCB1	qbi103118aRE_1-008	10/31/18 11:45
Calibration Check	Y8K0102-CCVA	qbi103118aRE_1-115	10/31/18 15:51
Calibration Blank	Y8K0102-CCBA	qbi103118aRE_1-116	10/31/18 15:53
Blank	BJ81698-BLK1	qbi103118aRE_1-119	10/31/18 16:01
LCS	BJ81698-BS1	qbi103118aRE_1-120	10/31/18 16:03
MW16_102518	18J1263-01	qbi103118aRE_1-122	10/31/18 16:08
MW16_102518	BJ81698-DUP1	qbi103118aRE_1-123	10/31/18 16:10
MW16_102518	BJ81698-MS1	qbi103118aRE_1-124	10/31/18 16:13
MW5_102518	18J1263-02	qbi103118aRE_1-125	10/31/18 16:15
MW7_102518	18J1263-03	qbi103118aRE_1-126	10/31/18 16:18
Calibration Check	Y8K0102-CCVB	qbi103118aRE_1-127	10/31/18 16:20
Calibration Blank	Y8K0102-CCBB	qbi103118aRE_1-128	10/31/18 16:23
MW14_102518	18J1263-04	qbi103118aRE_1-129	10/31/18 16:25
MW13_102518	18J1263-05	qbi103118aRE_1-130	10/31/18 16:28
MW12_102518	18J1263-06	qbi103118aRE_1-131	10/31/18 16:31
MW15_102518	18J1263-07	qbi103118aRE_1-132	10/31/18 16:33
DUP01_102518	18J1263-08	qbi103118aRE_1-133	10/31/18 16:35
FB01_102518	18J1263-10	qbi103118aRE_1-134	10/31/18 16:38
MW16_102518	Y8K0102-SRD6	qbi103118aRE_1-135	10/31/18 16:40
Calibration Check	Y8K0102-CCVC	qbi103118aRE_1-139	10/31/18 16:50
Calibration Blank	Y8K0102-CCBC	qbi103118aRE_1-140	10/31/18 16:53

HOLDING TIME SUMMARY

EPA 6010D

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
MW16_102518	10/25/18 09:20	10/25/18 20:09	10/30/18 16:02	5.28	180.00	10/31/18 16:08	6.28	180.00	
MW16_102518	10/25/18 09:20	10/25/18 20:09	10/29/18 15:01	4.24	180.00	10/30/18 17:41	5.35	180.00	
MW5_102518	10/25/18 15:55	10/25/18 20:09	10/29/18 15:01	3.96	180.00	10/30/18 17:48	5.08	180.00	
MW5_102518	10/25/18 15:55	10/25/18 20:09	10/30/18 16:02	5.00	180.00	10/31/18 16:15	6.01	180.00	
MW7_102518	10/25/18 16:05	10/25/18 20:09	10/29/18 15:01	3.96	180.00	10/30/18 17:51	5.07	180.00	
MW7_102518	10/25/18 16:05	10/25/18 20:09	10/30/18 16:02	5.00	180.00	10/31/18 16:18	6.01	180.00	
MW14_102518	10/25/18 14:45	10/25/18 20:09	10/30/18 16:02	5.05	180.00	10/31/18 16:25	6.07	180.00	
MW14_102518	10/25/18 14:45	10/25/18 20:09	10/29/18 15:01	4.01	180.00	10/30/18 17:54	5.13	180.00	
MW13_102518	10/25/18 15:10	10/25/18 20:09	10/30/18 16:02	5.04	180.00	10/31/18 16:28	6.05	180.00	
MW13_102518	10/25/18 15:10	10/25/18 20:09	10/29/18 15:01	3.99	180.00	10/30/18 17:56	5.12	180.00	
MW12_102518	10/25/18 15:20	10/25/18 20:09	10/30/18 16:02	5.03	180.00	10/31/18 16:31	6.05	180.00	
MW12_102518	10/25/18 15:20	10/25/18 20:09	10/29/18 15:01	3.99	180.00	10/30/18 17:59	5.11	180.00	
MW15_102518	10/25/18 15:35	10/25/18 20:09	10/30/18 16:02	5.02	180.00	10/31/18 16:33	6.04	180.00	
MW15_102518	10/25/18 15:35	10/25/18 20:09	10/29/18 15:01	3.98	180.00	10/30/18 18:06	5.11	180.00	
DUP01_102518	10/25/18 00:00	10/25/18 20:09	10/29/18 15:01	4.63	180.00	10/30/18 18:09	5.76	180.00	
DUP01_102518	10/25/18 00:00	10/25/18 20:09	10/30/18 16:02	5.67	180.00	10/31/18 16:35	6.69	180.00	
FB01_102518	10/25/18 07:15	10/25/18 20:09	10/30/18 16:02	5.37	180.00	10/31/18 16:38	6.39	180.00	
FB01_102518	10/25/18 07:15	10/25/18 20:09	10/29/18 15:01	4.32	180.00	10/30/18 18:11	5.46	180.00	

METHOD DETECTION AND REPORTING LIMITS

EPA 6010D

Laboratory: York Analytical Laboratories, Inc. **SDG:** 18J1263

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170264501

Matrix: Water **Instrument:** WinLabICP

Analyte	LOD	LOQ	Units
Iron	0.250	0.250	mg/L
Iron (dissolved)	0.250	0.250	mg/L

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

MW16_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-01 File ID: qbi103118aRE_1-122

Sampled: 10/25/18 09:20 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:08

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	6.57	1		EPA 6010D
7439-89-6	Iron (dissolved)	1.37	1		EPA 6010D

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

MW5_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-02 File ID: qbi103118aRE_1-125

Sampled: 10/25/18 15:55 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:15

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	3.41	1		EPA 6010D
7439-89-6	Iron (dissolved)	0.278	1	U	EPA 6010D

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

MW7_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-03 File ID: qbi103118aRE_1-126

Sampled: 10/25/18 16:05 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:18

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	2.90	1		EPA 6010D
7439-89-6	Iron (dissolved)	0.278	1	U	EPA 6010D

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

MW14_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-04 File ID: qbi103118aRE_1-129

Sampled: 10/25/18 14:45 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:25

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	0.309	1		EPA 6010D
7439-89-6	Iron (dissolved)	0.278	1	U	EPA 6010D

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

MW13_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-05 File ID: qbi103118aRE_1-130

Sampled: 10/25/18 15:10 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:28

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	10.4	1		EPA 6010D
7439-89-6	Iron (dissolved)	0.278	1	U	EPA 6010D

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

MW12_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-06 File ID: qbi103118aRE_1-131

Sampled: 10/25/18 15:20 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:31

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	64.4	1		EPA 6010D
7439-89-6	Iron (dissolved)	24.4	1		EPA 6010D

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

MW15_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-07 File ID: qbi103118aRE_1-132

Sampled: 10/25/18 15:35 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:33

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	1.46	1		EPA 6010D
7439-89-6	Iron (dissolved)	0.278	1	U	EPA 6010D

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

DUP01_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-08 File ID: qbi103118aRE_1-133

Sampled: 10/25/18 00:00 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:35

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	6.17	1		EPA 6010D
7439-89-6	Iron (dissolved)	0.882	1		EPA 6010D

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 6010D

FB01_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-10 File ID: qbi103118aRE_1-134

Sampled: 10/25/18 07:15 Prepared: 10/30/18 16:02 Analyzed: 10/31/18 16:38

Solids: 0.00 Preparation: EPA 3015A Initial/Final: 45 mL / 50 mL

Batch: BJ81698 Sequence: Y8K0102 Calibration: 10/31/18 1 Instrument: WinLabICP

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
7439-89-6	Iron	0.278	1	U	EPA 6010D
7439-89-6	Iron (dissolved)	0.278	1	U	EPA 6010D

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Instrument ID: WinLabICP
Calibration: 10/30/18
Control Limt: +/- 10.00%
Sequence: Y8J3107

Lab Sample ID	Analyte	True	Found	%R	Units	Method
Y8J3107-ICV1	Iron (dissolved)	5.00	5.03	101	ug/mL	EPA 6010D
Y8J3107-CCV1	Iron (dissolved)	5.00	5.01	100	ug/mL	EPA 6010D
Y8J3107-CCV2	Iron (dissolved)	5.00	4.92	98.5	ug/mL	EPA 6010D
Y8J3107-CCV3	Iron (dissolved)	5.00	5.07	101	ug/mL	EPA 6010D

* Values outside of QC limits

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Instrument ID: WinLabICP
Calibration: 10/31/18
Control Limt: +/- 10.00%
Sequence: Y8K0102

Lab Sample ID	Analyte	True	Found	%R	Units	Method
Y8K0102-ICV1	Iron	5.00	5.09	102	ug/mL	EPA 6010D
Y8K0102-CCV1	Iron	5.00	5.04	101	ug/mL	EPA 6010D
Y8K0102-CCVA	Iron	5.00	5.23	105	ug/mL	EPA 6010D
Y8K0102-CCVB	Iron	5.00	5.10	102	ug/mL	EPA 6010D
Y8K0102-CCVC	Iron	5.00	5.04	101	ug/mL	EPA 6010D

* Values outside of QC limits

CRDL STANDARD

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Instrument ID: WinLabICP
Calibration: 10/30/18
Sequence: Y8J3107

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
Y8J3107-CRL1	Iron (dissolved)	0.500	0.515	103	ug/mL	70 - 130

* Values outside of QC limits

CRDL STANDARD

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Instrument ID: WinLabICP
Calibration: 10/31/18
Sequence: Y8K0102

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
Y8K0102-CRL1	Iron	0.500	0.526	105	ug/mL	70 - 130

* Values outside of QC limits

ICP INTERFERENCE CHECK SAMPLE

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (
Project: 170264501
Instrument ID: WinLabICP
Calibration: 10/30/18
Sequence: Y8J3107

Lab Sample ID	Analyte	True	Found	%R	Units
Y8J3107-IFA1	Iron (dissolved)	200	190.33	95.2	ug/mL
Y8J3107-IFB1	Iron (dissolved)	200	190.64	95.3	ug/mL

* Values outside of QC limits

ICP INTERFERENCE CHECK SAMPLE

EPA 6010D

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (
Project: 170264501
Instrument ID: WinLabICP
Calibration: 10/31/18
Sequence: Y8K0102

Lab Sample ID	Analyte	True	Found	%R	Units
Y8K0102-IFA1	Iron	200	195.93	98.0	ug/mL
Y8K0102-IFB1	Iron	200	194.53	97.3	ug/mL

* Values outside of QC limits

Metals Linear Dynamic Range

EPA 6010D

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Instrument: WinLabICP

CAS NO.	Analyte	Concentration mg/L
7439-89-6	Iron	1000

IEC File Last Saved: 10/31/2018 10:33:27 AM
Printed On: 10/31/2018 10:33:38 AM

Results Data Set Name: qbi030415
Method Name: METHOD FOR IE
Results Library: C:\pe\Mikew\Results\Results.md

Interfering Analytes

	Analytes	Al RADIAL	Ca RADIAL	Fe RADIAL	Mg RADIAL
1	**Ag 338.289**	0	0.011281	-0.01	0
2	**Al 308.215**	0	0.0245069	-0.0817898	0.0376104
3	**Al RADIAL**	**n/a**	0.0296996	-0.105128	0
4	**As 188.979**	0	0	-0.035	0
7	**Ca 227.546**	-0.675005	0	-8.62387	-0.0625929
9	**Cd 226.502**	0	0	0.075	0
10	**Co 228.616**	0	0	-0.03	0
11	**Cr 267.716**	0	0	-0.01	0
12	**Cu 324.752**	0	0	0.005	0
16	**Mg 279.077**	0	0	0.161547	0
17	**Mg RADIAL**	0	0	0.0994223	**n/a**
18	**Mn 257.610**	0	0	-0.085	0
19	**Na 330.237**	0	-0.983571	-4.63141	0
21	**Ni 232.003**	0	0	0.025	0
22	**Pb 220.353**	-0.129664	-0.0141428	0.105	0
23	**Sb 206.836**	0.000505	0	-0.095	0
24	**Se 196.026**	0	0	0.615	0
25	**Tl 190.801**	0	0	-0.145	0
26	**V 292.402**	0	0	0.055	0
27	**Y 371.029**	9.77357	9.1591	24.475	8.93015
28	**Y RADIAL**	10.2987	9.68204	24.8989	9.399
29	**Zn 206.200**	0	0	0.01	0

IEC File Last Saved: 10/31/2018 2:29:24 PM
Printed On: 10/31/2018 2:29:36 PM

Results Data Set Name: qbi030415
Method Name: METHOD FOR IE
Results Library: C:\pe\Mikew\Results\Results.md

Interfering Analytes

	Analytes	Al RADIAL	Ca RADIAL	Fe RADIAL	Mg RADIAL
1	**Ag 338.289**	0	0.011281	-0.025	0
2	**Al 308.215**	0	0.0245069	-0.0817898	0.0376104
3	**Al RADIAL**	**n/a**	0.0296996	-0.105128	0
4	**As 188.979**	0	0	-0.015	0
7	**Ca 227.546**	-0.675005	0	-8.62387	-0.0625929
9	**Cd 226.502**	0	0	0.075	0
10	**Co 228.616**	0	0	-0.03	0
11	**Cr 267.716**	0	0	-0.01	0
12	**Cu 324.752**	0	0	-0.01	0
16	**Mg 279.077**	0	0	0.161547	0
17	**Mg RADIAL**	0	0	0.0994223	**n/a**
18	**Mn 257.610**	0	0	-0.085	0
19	**Na 330.237**	0	-0.983571	-4.63141	0
21	**Ni 232.003**	0	0	0.05	0
22	**Pb 220.353**	-0.129664	-0.0141428	0.09	0
23	**Sb 206.836**	0.000505	0	-0.085	0
24	**Se 196.026**	0	0	0.61	0
25	**Tl 190.801**	0	0	-0.015	0
26	**V 292.402**	0	0	0.075	0
27	**Y 371.029**	9.77357	9.1591	24.475	8.93015
28	**Y RADIAL**	10.2987	9.68204	24.8989	9.399
29	**Zn 206.200**	0	0	0.005	0

BENCHSHEETS

SDG: 18J1263

CLASS: METALS

METHOD: EPA 6010D

PREPARATION BENCH SHEET-AQUEOUS: BJ81616

Prepared: **10/29/2018 15:01**

York Analytical Laboratories, Inc.

Printed: 11/5/2018 10:42:18AM

Matrix: Water **Preparation EPA 3015A** **(No Surrogate)** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data			Decanted Y/N	Comments
									Initial	Acid	Basic		
18J1263-01 E	Iron, Dissolved by	45	50							NA			Lab to filter
18J1263-02 E	Iron, Dissolved by	45	50							NA			Lab to filter
18J1263-03 E	Iron, Dissolved by	45	50							NA			Lab to filter
18J1263-04 E	Iron, Dissolved by	45	50							NA			Lab to filter
18J1263-05 E	Iron, Dissolved by	45	50							NA			Lab to filter
18J1263-06 E	Iron, Dissolved by	45	50							NA			Lab to filter
18J1263-07 E	Iron, Dissolved by	45	50							NA			Lab to filter
18J1263-08 E	Iron, Dissolved by	45	50							NA			Lab to filter
18J1263-10 E	Iron, Dissolved by	45	50							NA			Lab to filter
BJ81616-BLK1	QC	45	50							NA			
BJ81616-BS1	QC	45	50	Y18J016	1					NA			
BJ81616-DUP1	QC	45	50					18J1263-01		NA			
BJ81616-MS1	QC	45	50	Y18J015	500			18J1263-01		NA			

Reagents:

ID Number	Description	Lot Number	ID Number	Description	Lot Number

Preparation Performed by SY **Date:** 10/29/2018 15:01

BENCHSHEETS

SDG: 18J1263

CLASS: METALS

METHOD: EPA 6010D

PREPARATION BENCH SHEET-AQUEOUS: BJ81698

Prepared: **10/30/2018 16:02**

York Analytical Laboratories, Inc.

Printed: 11/5/2018 10:42:10AM

Matrix: Water **Preparation EPA 3015A** **(No Surrogate)** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data Initial	pH Data Acid	pH Data Basic	Decanted Y/N	Comments
18J1227-01 A	Metals, RCRA	45	50							NA			
18J1263-01 G	Metals, RCRA	45	50							NA			Added for BatchQC in: BJ81698
18J1263-01 G	Iron by EPA 6010	45	50							NA			
18J1263-02 F	Iron by EPA 6010	45	50							NA			
18J1263-03 F	Iron by EPA 6010	45	50							NA			
18J1263-04 F	Iron by EPA 6010	45	50							NA			
18J1263-05 F	Iron by EPA 6010	45	50							NA			
18J1263-06 F	Iron by EPA 6010	45	50							NA			
18J1263-07 F	Iron by EPA 6010	45	50							NA			
18J1263-08 F	Iron by EPA 6010	45	50							NA			
18J1263-10 F	Iron by EPA 6010	45	50							NA			
BJ81698-BLK1	QC	45	50							NA			
BJ81698-BS1	QC	45	50	Y18J016	1					NA			
BJ81698-DUP1	QC	45	50					18J1263-01		NA			
BJ81698-MS1	QC	45	50	Y18J015	500			18J1263-01		NA			

Reagents:

ID Number	Description	Lot Number	ID Number	Description	Lot Number

Preparation Performed by SY **Date:** 10/30/2018 16:02

Sample Information Detail Report
Document Name: 103018b

File Description
Sample Information File

Parameters Common to All Samples

Batch ID	qbi103018b
Analyst Name	KML
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Remarks
1	3	SEQ-ICV1	
2	4	SEQ-ICB1	
3	5	SEQ-CRL1	
4	6	SEQ-CRL2	
5	7	SEQ-IFA1	
6	8	SEQ-IFB1	
7	9	SEQ-CCV1	
8	4	SEQ-CCB1	
9	101	BJ81616-BLK1	
10	102	BJ81616-BS1	
11	103	18J1263-01	
12	104	BJ81616-DUP1	
13	105	BJ81616-MS1	
14	106	18J1263-02	
15	107	18J1263-03	
16	108	18J1263-04	
17	109	18J1263-05	
18	110	18J1263-06	
19	9	SEQ-CCV2	
20	4	SEQ-CCB2	
21	111	18J1263-07	
22	112	18J1263-08	
23	113	18J1263-10	
24	114	18J1296-02	
25	115	18J1296-04	
26	116	18J1296-06	
27	117	SEQ-SRD1	
28	118	BJ81596-BLK1	
29	119	BJ81596-SRM1	
30	120	18J1303-01	
31	9	SEQ-CCV3	
32	4	SEQ-CCB3	
33	121	18J1306-05	
34	122	18J1306-06	
35	123	18J1306-07	
36	124	18J1306-08	
37	125	18J1306-09	
38	126	18J1306-11	
39	127	18J1306-12	
40	128	18J1309-07	
41	129	18J1309-08	
42	130	18J1310-01	
43	9	SEQ-CCV4	
44	4	SEQ-CCB4	
45	131	18J1310-02	
46	132	18J1310-03	
47	133	18J1321-01	
48	134	18J1321-02	
49	135	18J1321-03	
50	136	18J1331-01	
51	137	18J1331-02	

52	138	BJ81596-DUP1	
53	139	BJ81596-MS1	
54	140	SEQ-SRD2	18J1331-02
55	9	SEQ-CCV5	
56	4	SEQ-CCB5	
57	141	BJ81667-BLK1	
58	142	BJ81667-SRM1	
59	143	18J1351-01	
60	144	18J1351-03	
61	145	18J1372-01	
62	146	18J1376-01	
63	147	18J1376-02	
64	148	18J1376-03	
65	149	18J1378-01	
66	150	18J1378-03	
67	9	SEQ-CCV6	
68	4	SEQ-CCB6	
69	151	18J1381-01	
70	152	18J1381-02	
71	153	18J1381-03	
72	154	18J1381-04	
73	155	18J1381-05	
74	156	18J1381-06	
75	157	18J1381-07	
76	158	18J1381-08	
77	159	18J1381-09	
78	160	18J1381-10	
79	9	SEQ-CCV7	
80	4	SEQ-CCB7	
81	201	18J1381-11	
82	202	18J1381-12	
83	203	BJ81667-DUP1	
84	204	BJ81667-MS1	
85	205	SEQ-SRD3	18J1381-12
86	206	BJ81670-BLK1	
87	207	BJ81670-SRM1	
88	208	18J1316-01	
89	209	18J1316-02	
90	210	18J1316-03	
91	10	SEQ-CCV8	
92	1	SEQ-CCB8	
93	211	18J1338-01	
94	212	18J1338-02	
95	213	18J1338-03	
96	214	18J1338-04	
97	215	18J1338-05	
98	216	18J1350-01	
99	217	18J1359-01	
100	218	18J1359-02	
101	219	18J1359-03	
102	220	18J1359-04	
103	10	SEQ-CCV9	
104	1	SEQ-CCB9	
105	221	BJ81670-DUP1	
106	222	BJ81670-MS1	
107	223	SEQ-SRD4	18J1359-04
108	224	BJ81671-BLK1	
109	225	BJ81671-SRM1	
110	226	18J1374-01	
111	227	18J1374-02	
112	228	18J1374-03	
113	229	18J1374-04	
114	230	18J1374-05	
115	10	SEQ-CCVA	

116	1	SEQ-CCBA	
117	231	18J1374-06	
118	232	18J1374-07	
119	233	18J1374-08	
120	234	18J1374-09	
121	235	18J1374-10	
122	236	18J1374-11	
123	237	18J1374-12	
124	238	18J1374-13	
125	239	18J1374-14	
126	240	18J1374-15	
127	10	SEQ-CCVB	
128	1	SEQ-CCBB	
129	241	18J1374-16	
130	242	18J1390-24	
131	243	BJ81671-DUP1	
132	244	BJ81671-MS1	
133	245	SEQ-SRD5	18J1390-24
134	10	SEQ-CCVC	
135	1	SEQ-CCBC	
136	5	SEQ-CRL3	
137	6	SEQ-CRL4	
138	7	SEQ-IFA2	
139	8	SEQ-IFB2	
140	405	SEQ-HCV1	
141	1	BLANK1	
142	1	BLANK2	
143	9	SEQ-CCVD	
144	4	SEQ-CCBD	

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 10/30/2018 5:12:11 PM
Data Type: Reprocessed on 10/31/2018 10:33:56 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	16489496.2	158351.36	0.96%	5.000	mg/L
Y RADIAL	259298.1	1606.31	0.62%	5.000	mg/L
As 188.979†	-19.5	1.93	9.89%	[0.00]	mg/L
Tl 190.801†	-85.5	3.48	4.07%	[0.00]	mg/L
Se 196.026†	57.6	6.50	11.29%	[0.00]	mg/L
Zn 206.200†	-4.6	11.31	247.47%	[0.00]	mg/L
Sb 206.836†	84.1	8.64	10.27%	[0.00]	mg/L
Pb 220.353†	115.6	18.97	16.41%	[0.00]	mg/L
Cd 226.502†	-511.3	17.47	3.42%	[0.00]	mg/L
Co 228.616†	-193.3	15.98	8.27%	[0.00]	mg/L
Ni 232.003†	-1287.1	23.92	1.86%	[0.00]	mg/L
Ba 233.527†	-25.9	11.63	44.89%	[0.00]	mg/L
Mn 257.610†	465.7	8.74	1.88%	[0.00]	mg/L
Cr 267.716†	654.9	69.90	10.67%	[0.00]	mg/L
Fe 273.955†	-3.2	13.30	409.95%	[0.00]	mg/L
Mg 279.077†	-73.9	40.90	55.37%	[0.00]	mg/L
V 292.402†	-348.0	33.25	9.56%	[0.00]	mg/L
Al 308.215†	5239.6	81.61	1.56%	[0.00]	mg/L
Be 313.107†	-7138.0	151.08	2.12%	[0.00]	mg/L
Cu 324.752†	533.6	69.21	12.97%	[0.00]	mg/L
Ag 338.289†	278.0	16.93	6.09%	[0.00]	mg/L
Na 330.237†	199.9	39.49	19.75%	[0.00]	mg/L
Ca 227.546†	-623.8	10.12	1.62%	[0.00]	mg/L
Al RADIAL†	7.4	28.78	387.79%	[0.00]	mg/L
Fe RADIAL†	7.3	4.28	58.60%	[0.00]	mg/L
Ca RADIAL†	1396.8	17.70	1.27%	[0.00]	mg/L
K RADIAL†	455.6	56.48	12.40%	[0.00]	mg/L
Mg RADIAL†	22.0	2.21	10.06%	[0.00]	mg/L
Na RADIAL†	983.4	53.82	5.47%	[0.00]	mg/L

Sequence No.: 2
Sample ID: CAL STD 1
Analyst:
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 2
Date Collected: 10/30/2018 5:14:41 PM
Data Type: Reprocessed on 10/31/2018 10:34:00 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: CAL STD 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	15925484.0	77480.56	0.49%	4.829	mg/L
Y RADIAL	256688.8	691.87	0.27%	4.950	mg/L
As 188.979†	1542.2	2.84	0.18%	[1.0000]	mg/L
Tl 190.801†	1857.2	14.81	0.80%	[1.0000]	mg/L
Se 196.026†	1912.9	2.58	0.13%	[1.0000]	mg/L
Zn 206.200†	195948.5	573.12	0.29%	[5.0000]	mg/L
Sb 206.836†	1193.6	8.40	0.70%	[0.5000]	mg/L
Pb 220.353†	11893.8	32.87	0.28%	[1.0000]	mg/L
Cd 226.502†	71375.6	81.25	0.11%	[0.5000]	mg/L
Co 228.616†	193084.5	166.88	0.09%	[5.0000]	mg/L
Ni 232.003†	91814.8	160.45	0.17%	[5.0000]	mg/L
Ba 233.527†	1747322.2	2485.22	0.14%	[20.0000]	mg/L
Mn 257.610†	3288874.2	4475.43	0.14%	[5.0000]	mg/L
Cr 267.716†	279705.3	473.15	0.17%	[2.0000]	mg/L
Fe 273.955†	220978.4	436.08	0.20%	[10.0000]	mg/L
Mg 279.077†	1045641.9	1891.31	0.18%	[50.0000]	mg/L
V 292.402†	1063815.7	2719.39	0.26%	[5.0000]	mg/L
Al 308.215†	366298.2	932.92	0.25%	[20.0000]	mg/L
Be 313.107†	1879704.5	3387.82	0.18%	[0.5000]	mg/L
Cu 324.752†	563270.4	1197.33	0.21%	[2.5000]	mg/L
Ag 338.289†	244091.8	362.84	0.15%	[2.5000]	mg/L
Na 330.237†	31914.7	179.78	0.56%	[50.0000]	mg/L
Ca 227.546†	12292.4	62.64	0.51%	[50.0000]	mg/L
Al RADIAL†	24146.3	214.00	0.89%	[20.0000]	mg/L
Fe RADIAL†	3920.0	47.17	1.20%	[10.0000]	mg/L
Ca RADIAL†	200244.4	198.64	0.10%	[50.0000]	mg/L
K RADIAL†	11122.9	166.88	1.50%	[10.0000]	mg/L
Mg RADIAL†	22733.5	344.43	1.52%	[50.0000]	mg/L
Na RADIAL†	174681.9	1667.03	0.95%	[50.0000]	mg/L

Sequence No.: 3
Sample ID: SEQ-ICV1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 10/30/2018 5:16:49 PM
Data Type: Reprocessed on 10/31/2018 10:34:00 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-ICV1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15993446.3	4.850	mg/L	0.0139				0.29%
Y RADIAL	262910.5	5.070	mg/L	0.0199				0.39%
As 188.979†	401.2	0.2603	mg/L	0.00441	0.2603	mg/L	0.00441	1.69%
Tl 190.801†	484.5	0.2616	mg/L	0.00557	0.2616	mg/L	0.00557	2.13%
Se 196.026†	541.2	0.2798	mg/L	0.00664	0.2798	mg/L	0.00664	2.37%
Zn 206.200†	102682.8	2.620	mg/L	0.0018	2.620	mg/L	0.0018	0.07%
Sb 206.836†	647.1	0.2715	mg/L	0.00456	0.2715	mg/L	0.00456	1.68%
Pb 220.353†	3050.2	0.2576	mg/L	0.00263	0.2576	mg/L	0.00263	1.02%
Cd 226.502†	18447.2	0.1288	mg/L	0.00049	0.1288	mg/L	0.00049	0.38%
Co 228.616†	101119.0	2.619	mg/L	0.0086	2.619	mg/L	0.0086	0.33%
Ni 232.003†	47740.8	2.600	mg/L	0.0048	2.600	mg/L	0.0048	0.18%
Ba 233.527†	901547.4	10.32	mg/L	0.039	10.32	mg/L	0.039	0.38%
Mn 257.610†	1682495.3	2.558	mg/L	0.0087	2.558	mg/L	0.0087	0.34%
Cr 267.716†	148825.1	1.064	mg/L	0.0033	1.064	mg/L	0.0033	0.31%
Fe 273.955†	116510.7	5.272	mg/L	0.0114	5.272	mg/L	0.0114	0.22%
Mg 279.077†	527205.3	25.21	mg/L	0.120	25.21	mg/L	0.120	0.48%
V 292.402†	540141.9	2.538	mg/L	0.0073	2.538	mg/L	0.0073	0.29%
Al 308.215†	189636.3	10.35	mg/L	0.021	10.35	mg/L	0.021	0.20%
Be 313.107†	970769.0	0.25822	mg/L	0.000785	0.25822	mg/L	0.000785	0.30%
Cu 324.752†	297434.2	1.320	mg/L	0.0031	1.320	mg/L	0.0031	0.24%
Ag 338.289†	127429.5	1.305	mg/L	0.0024	1.305	mg/L	0.0024	0.19%
Na 330.237†	15472.5	24.29	mg/L	0.117	24.29	mg/L	0.117	0.48%
Ca 227.546†	6123.6	24.96	mg/L	0.064	24.96	mg/L	0.064	0.26%
Al RADIAL†	12087.9	10.01	mg/L	0.053	10.01	mg/L	0.053	0.53%
Fe RADIAL†	1971.3	5.029	mg/L	0.0489	5.029	mg/L	0.0489	0.97%
Ca RADIAL†	101067.4	25.24	mg/L	0.054	25.24	mg/L	0.054	0.22%
K RADIAL†	5435.9	4.887	mg/L	0.0204	4.887	mg/L	0.0204	0.42%
Mg RADIAL†	11354.4	24.97	mg/L	0.137	24.97	mg/L	0.137	0.55%
Na RADIAL†	88813.2	25.42	mg/L	0.140	25.42	mg/L	0.140	0.55%

Sequence No.: 4
Sample ID: SEQ-ICB1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 10/30/2018 5:19:26 PM
Data Type: Reprocessed on 10/31/2018 10:34:01 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-ICB1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Calib. Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Y 371.029	16439863.0	4.985	mg/L	0.0337				0.68%
Y RADIAL	260735.5	5.028	mg/L	0.0182				0.36%
As 188.979†	3.8	0.0025	mg/L	0.00654	0.0025	mg/L	0.00654	265.49%
Tl 190.801†	-13.5	-0.0073	mg/L	0.00448	-0.0073	mg/L	0.00448	61.34%
Se 196.026†	-6.5	-0.0034	mg/L	0.00402	-0.0034	mg/L	0.00402	118.50%
Zn 206.200†	20.3	0.0005	mg/L	0.00023	0.0005	mg/L	0.00023	44.84%
Sb 206.836†	-2.0	-0.0008	mg/L	0.00180	-0.0008	mg/L	0.00180	219.08%
Pb 220.353†	10.6	0.0009	mg/L	0.00055	0.0009	mg/L	0.00055	61.81%
Cd 226.502†	5.6	0.0000	mg/L	0.00015	0.0000	mg/L	0.00015	385.48%
Co 228.616†	2.8	0.0001	mg/L	0.00007	0.0001	mg/L	0.00007	92.23%
Ni 232.003†	-35.5	-0.0019	mg/L	0.00016	-0.0019	mg/L	0.00016	8.37%
Ba 233.527†	6.0	0.0001	mg/L	0.00022	0.0001	mg/L	0.00022	318.09%
Mn 257.610†	6.2	0.0000	mg/L	0.00001	0.0000	mg/L	0.00001	140.61%
Cr 267.716†	-17.6	-0.0001	mg/L	0.00009	-0.0001	mg/L	0.00009	73.51%
Fe 273.955†	-18.9	-0.0009	mg/L	0.00084	-0.0009	mg/L	0.00084	97.92%
Mg 279.077†	46.4	0.0022	mg/L	0.00274	0.0022	mg/L	0.00274	123.53%
V 292.402†	70.0	0.0003	mg/L	0.00021	0.0003	mg/L	0.00021	64.10%
Al 308.215†	-438.3	-0.0239	mg/L	0.00484	-0.0239	mg/L	0.00484	20.23%
Be 313.107†	47.7	0.00001	mg/L	0.000065	0.00001	mg/L	0.000065	510.14%
Cu 324.752†	57.4	0.0003	mg/L	0.00037	0.0003	mg/L	0.00037	144.16%
Ag 338.289†	79.2	0.0008	mg/L	0.00064	0.0008	mg/L	0.00064	78.85%
Na 330.237†	-89.1	-0.1396	mg/L	0.06324	-0.1396	mg/L	0.06324	45.29%
Ca 227.546†	-1.1	-0.0047	mg/L	0.05108	-0.0047	mg/L	0.05108	>999.9%
Al RADIAL†	14.4	0.0119	mg/L	0.02419	0.0119	mg/L	0.02419	203.14%
Fe RADIAL†	-4.2	-0.0107	mg/L	0.01173	-0.0107	mg/L	0.01173	109.82%
Ca RADIAL†	1.4	0.0004	mg/L	0.00479	0.0004	mg/L	0.00479	>999.9%
K RADIAL†	24.1	0.0217	mg/L	0.05759	0.0217	mg/L	0.05759	265.38%
Mg RADIAL†	1.7	0.0037	mg/L	0.01038	0.0037	mg/L	0.01038	278.22%
Na RADIAL†	71.0	0.0203	mg/L	0.00463	0.0203	mg/L	0.00463	22.75%

Sequence No.: 5
Sample ID: SEQ-CRL1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 10/30/2018 5:21:56 PM
Data Type: Reprocessed on 10/31/2018 10:34:02 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CRL1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16389056.7	4.970	mg/L	0.0133				0.27%
Y RADIAL	258592.1	4.986	mg/L	0.0834				1.67%
As 188.979†	12.5	0.0081	mg/L	0.00216	0.0081	mg/L	0.00216	26.51%
Tl 190.801†	29.7	0.0160	mg/L	0.00039	0.0160	mg/L	0.00039	2.40%
Se 196.026†	28.8	0.0147	mg/L	0.00444	0.0147	mg/L	0.00444	30.12%
Zn 206.200†	1321.5	0.0337	mg/L	0.00022	0.0337	mg/L	0.00022	0.66%
Sb 206.836†	56.1	0.0236	mg/L	0.00265	0.0236	mg/L	0.00265	11.25%
Pb 220.353†	58.6	0.0050	mg/L	0.00185	0.0050	mg/L	0.00185	37.40%
Cd 226.502†	472.8	0.0033	mg/L	0.00019	0.0033	mg/L	0.00019	5.95%
Co 228.616†	136.5	0.0035	mg/L	0.00022	0.0035	mg/L	0.00022	6.31%
Ni 232.003†	150.1	0.0082	mg/L	0.00103	0.0082	mg/L	0.00103	12.63%
Ba 233.527†	2291.6	0.0262	mg/L	0.00027	0.0262	mg/L	0.00027	1.02%
Mn 257.610†	6595.8	0.0101	mg/L	0.00005	0.0101	mg/L	0.00005	0.54%
Cr 267.716†	674.9	0.0048	mg/L	0.00008	0.0048	mg/L	0.00008	1.69%
Fe 273.955†	11340.5	0.5132	mg/L	0.00492	0.5132	mg/L	0.00492	0.96%
Mg 279.077†	10392.3	0.4969	mg/L	0.00451	0.4969	mg/L	0.00451	0.91%
V 292.402†	2187.4	0.0103	mg/L	0.00025	0.0103	mg/L	0.00025	2.45%
Al 308.215†	8801.5	0.4806	mg/L	0.00826	0.4806	mg/L	0.00826	1.72%
Be 313.107†	1755.4	0.00047	mg/L	0.000032	0.00047	mg/L	0.000032	6.93%
Cu 324.752†	9398.3	0.0417	mg/L	0.00030	0.0417	mg/L	0.00030	0.73%
Ag 338.289†	1050.0	0.0108	mg/L	0.00186	0.0108	mg/L	0.00186	17.31%
Na 330.237†	309.4	0.4878	mg/L	0.10912	0.4878	mg/L	0.10912	22.37%
Ca 227.546†	188.5	0.7715	mg/L	0.07317	0.7715	mg/L	0.07317	9.48%
Al RADIAL†	675.9	0.5598	mg/L	0.02294	0.5598	mg/L	0.02294	4.10%
Fe RADIAL†	202.0	0.5153	mg/L	0.00601	0.5153	mg/L	0.00601	1.17%
Ca RADIAL†	2483.9	0.6202	mg/L	0.02345	0.6202	mg/L	0.02345	3.78%
K RADIAL†	595.3	0.5352	mg/L	0.02955	0.5352	mg/L	0.02955	5.52%
Mg RADIAL†	229.9	0.5056	mg/L	0.04539	0.5056	mg/L	0.04539	8.98%
Na RADIAL†	1693.7	0.4848	mg/L	0.03203	0.4848	mg/L	0.03203	6.61%

Sequence No.: 7
Sample ID: SEQ-IFA1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 7
Date Collected: 10/30/2018 5:26:56 PM
Data Type: Reprocessed on 10/31/2018 10:34:03 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-IFA1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	13410636.1	4.066	mg/L	0.0167				0.41%
Y RADIAL	228529.8	4.407	mg/L	0.0696				1.58%
As 188.979†	-9.7	0.0004	mg/L	0.01074	0.0004	mg/L	0.01074	>999.9%
Tl 190.801†	-52.3	-0.0006	mg/L	0.00935	-0.0006	mg/L	0.00935	>999.9%
Se 196.026†	222.3	-0.0009	mg/L	0.00090	-0.0009	mg/L	0.00090	104.54%
Zn 206.200†	80.0	0.0001	mg/L	0.00054	0.0001	mg/L	0.00054	392.75%
Sb 206.836†	-41.9	0.0003	mg/L	0.00124	0.0003	mg/L	0.00124	439.09%
Pb 220.353†	-630.5	0.0005	mg/L	0.00275	0.0005	mg/L	0.00275	599.21%
Cd 226.502†	2044.3	0.0000	mg/L	0.00021	0.0000	mg/L	0.00021	465.71%
Co 228.616†	-233.3	-0.0003	mg/L	0.00107	-0.0003	mg/L	0.00107	321.94%
Ni 232.003†	89.1	0.0001	mg/L	0.00282	0.0001	mg/L	0.00282	>999.9%
Ba 233.527†	103.7	0.0012	mg/L	0.00009	0.0012	mg/L	0.00009	7.61%
Mn 257.610†	-11071.7	-0.0007	mg/L	0.00027	-0.0007	mg/L	0.00027	41.44%
Cr 267.716†	-329.5	-0.0005	mg/L	0.00022	-0.0005	mg/L	0.00022	49.36%
Fe 273.955†	4238433.6	191.8	mg/L	0.59	191.8	mg/L	0.59	0.31%
Mg 279.077†	10488189.7	501.5	mg/L	0.83	501.5	mg/L	0.83	0.17%
V 292.402†	2228.2	0.0000	mg/L	0.00020	0.0000	mg/L	0.00020	>999.9%
Al 308.215†	10125201.2	552.8	mg/L	0.86	552.8	mg/L	0.86	0.16%
Be 313.107†	-963.1	-0.00026	mg/L	0.000026	-0.00026	mg/L	0.000026	10.06%
Cu 324.752†	113.1	-0.0004	mg/L	0.00006	-0.0004	mg/L	0.00006	13.80%
Ag 338.289†	255.6	-0.0009	mg/L	0.00064	-0.0009	mg/L	0.00064	74.73%
Na 330.237†	-1422.8	-0.8793	mg/L	0.12355	-0.8793	mg/L	0.12355	14.05%
Ca 227.546†	127157.4	519.2	mg/L	1.74	519.2	mg/L	1.74	0.33%
Al RADIAL†	621279.4	514.6	mg/L	10.78	514.6	mg/L	10.78	2.09%
Fe RADIAL†	74610.3	190.3	mg/L	0.07	190.3	mg/L	0.07	0.03%
Ca RADIAL†	1906686.5	476.1	mg/L	8.10	476.1	mg/L	8.10	1.70%
K RADIAL†	91.1	0.0819	mg/L	0.00857	0.0819	mg/L	0.00857	10.46%
Mg RADIAL†	216655.4	476.5	mg/L	0.62	476.5	mg/L	0.62	0.13%
Na RADIAL†	-42.0	-0.0120	mg/L	0.01401	-0.0120	mg/L	0.01401	116.60%

Sequence No.: 8
Sample ID: SEQ-IFB1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 8
Date Collected: 10/30/2018 5:29:04 PM
Data Type: Reprocessed on 10/31/2018 10:34:03 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-IFB1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	13654956.0	4.141	mg/L	0.0230				0.56%
Y RADIAL	231672.1	4.467	mg/L	0.0614				1.37%
As 188.979†	767.0	0.5040	mg/L	0.00911	0.5040	mg/L	0.00911	1.81%
Tl 190.801†	876.6	0.4996	mg/L	0.00742	0.4996	mg/L	0.00742	1.48%
Se 196.026†	1094.6	0.4550	mg/L	0.00868	0.4550	mg/L	0.00868	1.91%
Zn 206.200†	37060.9	0.9438	mg/L	0.00713	0.9438	mg/L	0.00713	0.76%
Sb 206.836†	1217.5	0.5279	mg/L	0.01034	0.5279	mg/L	0.01034	1.96%
Pb 220.353†	10487.2	0.9338	mg/L	0.00895	0.9338	mg/L	0.00895	0.96%
Cd 226.502†	137988.1	0.9523	mg/L	0.00719	0.9523	mg/L	0.00719	0.75%
Co 228.616†	18396.5	0.4821	mg/L	0.00397	0.4821	mg/L	0.00397	0.82%
Ni 232.003†	18716.0	1.014	mg/L	0.0080	1.014	mg/L	0.0080	0.79%
Ba 233.527†	44407.8	0.5083	mg/L	0.00407	0.5083	mg/L	0.00407	0.80%
Mn 257.610†	311997.4	0.4905	mg/L	0.00292	0.4905	mg/L	0.00292	0.60%
Cr 267.716†	68956.5	0.4950	mg/L	0.00330	0.4950	mg/L	0.00330	0.67%
Fe 273.955†	4261214.4	192.8	mg/L	1.18	192.8	mg/L	1.18	0.61%
Mg 279.077†	10486246.7	501.4	mg/L	1.34	501.4	mg/L	1.34	0.27%
V 292.402†	107864.1	0.4965	mg/L	0.00344	0.4965	mg/L	0.00344	0.69%
Al 308.215†	10002519.6	546.1	mg/L	1.32	546.1	mg/L	1.32	0.24%
Be 313.107†	1876402.6	0.49912	mg/L	0.003849	0.49912	mg/L	0.003849	0.77%
Cu 324.752†	124387.2	0.5511	mg/L	0.00304	0.5511	mg/L	0.00304	0.55%
Ag 338.289†	107167.5	1.094	mg/L	0.0082	1.094	mg/L	0.0082	0.75%
Na 330.237†	-712.6	0.2327	mg/L	0.10087	0.2327	mg/L	0.10087	43.34%
Ca 227.546†	126574.3	516.9	mg/L	3.96	516.9	mg/L	3.96	0.77%
Al RADIAL†	608449.8	504.0	mg/L	8.45	504.0	mg/L	8.45	1.68%
Fe RADIAL†	74729.6	190.6	mg/L	0.19	190.6	mg/L	0.19	0.10%
Ca RADIAL†	1898342.1	474.0	mg/L	8.44	474.0	mg/L	8.44	1.78%
K RADIAL†	57.2	0.0515	mg/L	0.05305	0.0515	mg/L	0.05305	103.08%
Mg RADIAL†	216896.5	477.0	mg/L	0.26	477.0	mg/L	0.26	0.05%
Na RADIAL†	151.1	0.0432	mg/L	0.00268	0.0432	mg/L	0.00268	6.20%

Sequence No.: 9
Sample ID: SEQ-CCV1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 9
Date Collected: 10/30/2018 5:31:13 PM
Data Type: Reprocessed on 10/31/2018 10:34:04 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCV1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	15847338.0	4.805	mg/L	0.0311				0.65%
Y RADIAL	253605.6	4.890	mg/L	0.0098				0.20%
As 188.979†	768.7	0.4986	mg/L	0.00441	0.4986	mg/L	0.00441	0.88%
Tl 190.801†	940.5	0.5072	mg/L	0.00279	0.5072	mg/L	0.00279	0.55%
Se 196.026†	964.0	0.5009	mg/L	0.00394	0.5009	mg/L	0.00394	0.79%
Zn 206.200†	98615.2	2.516	mg/L	0.0074	2.516	mg/L	0.0074	0.29%
Sb 206.836†	618.4	0.2595	mg/L	0.00534	0.2595	mg/L	0.00534	2.06%
Pb 220.353†	5955.8	0.5019	mg/L	0.00609	0.5019	mg/L	0.00609	1.21%
Cd 226.502†	35865.3	0.2509	mg/L	0.00093	0.2509	mg/L	0.00093	0.37%
Co 228.616†	98437.5	2.549	mg/L	0.0093	2.549	mg/L	0.0093	0.36%
Ni 232.003†	46532.3	2.534	mg/L	0.0066	2.534	mg/L	0.0066	0.26%
Ba 233.527†	899715.1	10.30	mg/L	0.038	10.30	mg/L	0.038	0.37%
Mn 257.610†	1685818.2	2.563	mg/L	0.0074	2.563	mg/L	0.0074	0.29%
Cr 267.716†	142670.2	1.020	mg/L	0.0036	1.020	mg/L	0.0036	0.35%
Fe 273.955†	112668.5	5.099	mg/L	0.0167	5.099	mg/L	0.0167	0.33%
Mg 279.077†	530528.1	25.37	mg/L	0.058	25.37	mg/L	0.058	0.23%
V 292.402†	540086.2	2.538	mg/L	0.0092	2.538	mg/L	0.0092	0.36%
Al 308.215†	183154.0	9.999	mg/L	0.0419	9.999	mg/L	0.0419	0.42%
Be 313.107†	949392.7	0.25254	mg/L	0.000857	0.25254	mg/L	0.000857	0.34%
Cu 324.752†	286510.5	1.272	mg/L	0.0041	1.272	mg/L	0.0041	0.33%
Ag 338.289†	124161.4	1.271	mg/L	0.0036	1.271	mg/L	0.0036	0.29%
Na 330.237†	15146.0	23.78	mg/L	0.067	23.78	mg/L	0.067	0.28%
Ca 227.546†	6145.2	25.05	mg/L	0.252	25.05	mg/L	0.252	1.01%
Al RADIAL†	12211.1	10.11	mg/L	0.054	10.11	mg/L	0.054	0.53%
Fe RADIAL†	1962.7	5.007	mg/L	0.0196	5.007	mg/L	0.0196	0.39%
Ca RADIAL†	99235.5	24.78	mg/L	0.021	24.78	mg/L	0.021	0.09%
K RADIAL†	5397.2	4.852	mg/L	0.0330	4.852	mg/L	0.0330	0.68%
Mg RADIAL†	11383.0	25.04	mg/L	0.118	25.04	mg/L	0.118	0.47%
Na RADIAL†	86551.2	24.77	mg/L	0.181	24.77	mg/L	0.181	0.73%

Sequence No.: 10
Sample ID: SEQ-CCB1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 10/30/2018 5:33:44 PM
Data Type: Reprocessed on 10/31/2018 10:34:04 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCB1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16699480.5	5.064	mg/L	0.0431				0.85%
Y RADIAL	264994.6	5.110	mg/L	0.0466				0.91%
As 188.979†	8.2	0.0053	mg/L	0.00326	0.0053	mg/L	0.00326	61.49%
Tl 190.801†	5.6	0.0030	mg/L	0.00518	0.0030	mg/L	0.00518	170.75%
Se 196.026†	-0.1	0.0000	mg/L	0.00744	0.0000	mg/L	0.00744	>999.9%
Zn 206.200†	27.3	0.0007	mg/L	0.00013	0.0007	mg/L	0.00013	18.55%
Sb 206.836†	2.5	0.0011	mg/L	0.00091	0.0011	mg/L	0.00091	86.30%
Pb 220.353†	18.9	0.0016	mg/L	0.00116	0.0016	mg/L	0.00116	72.51%
Cd 226.502†	27.7	0.0002	mg/L	0.00009	0.0002	mg/L	0.00009	46.38%
Co 228.616†	-9.2	-0.0002	mg/L	0.00025	-0.0002	mg/L	0.00025	103.70%
Ni 232.003†	8.9	0.0005	mg/L	0.00113	0.0005	mg/L	0.00113	233.39%
Ba 233.527†	9.0	0.0001	mg/L	0.00027	0.0001	mg/L	0.00027	259.91%
Mn 257.610†	-12.9	0.0000	mg/L	0.00003	0.0000	mg/L	0.00003	155.38%
Cr 267.716†	25.5	0.0002	mg/L	0.00007	0.0002	mg/L	0.00007	36.34%
Fe 273.955†	8.7	0.0004	mg/L	0.00053	0.0004	mg/L	0.00053	135.26%
Mg 279.077†	-92.2	-0.0044	mg/L	0.00176	-0.0044	mg/L	0.00176	39.95%
V 292.402†	-47.2	-0.0002	mg/L	0.00049	-0.0002	mg/L	0.00049	223.81%
Al 308.215†	-149.0	-0.0081	mg/L	0.00042	-0.0081	mg/L	0.00042	5.10%
Be 313.107†	-262.6	-0.00007	mg/L	0.000043	-0.00007	mg/L	0.000043	61.09%
Cu 324.752†	51.9	0.0002	mg/L	0.00018	0.0002	mg/L	0.00018	76.85%
Ag 338.289†	73.9	0.0008	mg/L	0.00066	0.0008	mg/L	0.00066	87.62%
Na 330.237†	17.5	0.0274	mg/L	0.06317	0.0274	mg/L	0.06317	230.57%
Ca 227.546†	1.3	0.0051	mg/L	0.09846	0.0051	mg/L	0.09846	>999.9%
Al RADIAL†	3.3	0.0027	mg/L	0.01241	0.0027	mg/L	0.01241	454.92%
Fe RADIAL†	-6.4	-0.0164	mg/L	0.01331	-0.0164	mg/L	0.01331	81.32%
Ca RADIAL†	-23.3	-0.0058	mg/L	0.00532	-0.0058	mg/L	0.00532	91.33%
K RADIAL†	-15.1	-0.0136	mg/L	0.02593	-0.0136	mg/L	0.02593	190.74%
Mg RADIAL†	3.4	0.0075	mg/L	0.00801	0.0075	mg/L	0.00801	107.42%
Na RADIAL†	-94.9	-0.0272	mg/L	0.03109	-0.0272	mg/L	0.03109	114.44%

Sequence No.: 11
Sample ID: BJ81616-BLK1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 101
Date Collected: 10/30/2018 5:36:14 PM
Data Type: Reprocessed on 10/31/2018 10:34:05 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: BJ81616-BLK1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	16491858.4	5.001	mg/L	0.0194				0.39%
Y RADIAL	263262.9	5.076	mg/L	0.0687				1.35%
As 188.979†	0.8	0.0005	mg/L	0.00167	0.0005	mg/L	0.00167	308.57%
Tl 190.801†	11.0	0.0059	mg/L	0.00177	0.0059	mg/L	0.00177	29.82%
Se 196.026†	26.4	0.0138	mg/L	0.00476	0.0138	mg/L	0.00476	34.45%
Zn 206.200†	45.0	0.0011	mg/L	0.00025	0.0011	mg/L	0.00025	22.18%
Sb 206.836†	21.8	0.0091	mg/L	0.00676	0.0091	mg/L	0.00676	73.88%
Pb 220.353†	73.6	0.0062	mg/L	0.00092	0.0062	mg/L	0.00092	14.83%
Cd 226.502†	311.4	0.0022	mg/L	0.00024	0.0022	mg/L	0.00024	11.04%
Co 228.616†	-13.3	-0.0003	mg/L	0.00052	-0.0003	mg/L	0.00052	150.38%
Ni 232.003†	-29.3	-0.0016	mg/L	0.00116	-0.0016	mg/L	0.00116	72.39%
Ba 233.527†	-1.5	0.0000	mg/L	0.00007	0.0000	mg/L	0.00007	417.77%
Mn 257.610†	195.1	0.0003	mg/L	0.00001	0.0003	mg/L	0.00001	4.46%
Cr 267.716†	35.8	0.0003	mg/L	0.00014	0.0003	mg/L	0.00014	55.61%
Fe 273.955†	794.7	0.0360	mg/L	0.00029	0.0360	mg/L	0.00029	0.80%
Mg 279.077†	37.9	0.0018	mg/L	0.00030	0.0018	mg/L	0.00030	16.81%
V 292.402†	63.7	0.0003	mg/L	0.00023	0.0003	mg/L	0.00023	75.97%
Al 308.215†	-353.8	-0.0193	mg/L	0.00233	-0.0193	mg/L	0.00233	12.07%
Be 313.107†	-153.0	-0.00004	mg/L	0.000035	-0.00004	mg/L	0.000035	86.06%
Cu 324.752†	178.7	0.0008	mg/L	0.00058	0.0008	mg/L	0.00058	73.03%
Ag 338.289†	105.5	0.0011	mg/L	0.00120	0.0011	mg/L	0.00120	110.57%
Na 330.237†	24.3	0.0381	mg/L	0.10853	0.0381	mg/L	0.10853	284.50%
Ca 227.546†	19.7	0.0806	mg/L	0.01692	0.0806	mg/L	0.01692	21.00%
Al RADIAL†	41.5	0.0343	mg/L	0.01512	0.0343	mg/L	0.01512	44.04%
Fe RADIAL†	10.9	0.0277	mg/L	0.01358	0.0277	mg/L	0.01358	49.01%
Ca RADIAL†	3.1	0.0008	mg/L	0.00517	0.0008	mg/L	0.00517	660.65%
K RADIAL†	83.4	0.0750	mg/L	0.04283	0.0750	mg/L	0.04283	57.10%
Mg RADIAL†	1.7	0.0037	mg/L	0.00582	0.0037	mg/L	0.00582	156.92%
Na RADIAL†	312.5	0.0894	mg/L	0.05553	0.0894	mg/L	0.05553	62.09%

Sequence No.: 12
Sample ID: BJ81616-BS1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 102
Date Collected: 10/30/2018 5:38:43 PM
Data Type: Reprocessed on 10/31/2018 10:34:05 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: BJ81616-BS1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Y 371.029	16090250.3	4.879	mg/L	0.0301				0.62%
Y RADIAL	258698.9	4.988	mg/L	0.0668				1.34%
As 188.979†	2823.0	1.831	mg/L	0.0112	1.831	mg/L	0.0112	0.61%
Tl 190.801†	3873.4	2.086	mg/L	0.0345	2.086	mg/L	0.0345	1.65%
Se 196.026†	3283.2	1.716	mg/L	0.0260	1.716	mg/L	0.0260	1.52%
Zn 206.200†	19333.9	0.4933	mg/L	0.00476	0.4933	mg/L	0.00476	0.96%
Sb 206.836†	643.4	0.2696	mg/L	0.00305	0.2696	mg/L	0.00305	1.13%
Pb 220.353†	5998.2	0.5045	mg/L	0.00551	0.5045	mg/L	0.00551	1.09%
Cd 226.502†	7412.9	0.0518	mg/L	0.00042	0.0518	mg/L	0.00042	0.82%
Co 228.616†	20750.7	0.5374	mg/L	0.00441	0.5374	mg/L	0.00441	0.82%
Ni 232.003†	9736.6	0.5302	mg/L	0.00386	0.5302	mg/L	0.00386	0.73%
Ba 233.527†	182507.2	2.089	mg/L	0.0104	2.089	mg/L	0.0104	0.50%
Mn 257.610†	343858.2	0.5229	mg/L	0.00266	0.5229	mg/L	0.00266	0.51%
Cr 267.716†	28739.4	0.2055	mg/L	0.00147	0.2055	mg/L	0.00147	0.72%
Fe 273.955†	27187.9	1.230	mg/L	0.0115	1.230	mg/L	0.0115	0.94%
Mg 279.077†	21795.5	1.042	mg/L	0.0089	1.042	mg/L	0.0089	0.85%
V 292.402†	107242.3	0.5040	mg/L	0.00154	0.5040	mg/L	0.00154	0.31%
Al 308.215†	34389.9	1.878	mg/L	0.0050	1.878	mg/L	0.0050	0.27%
Be 313.107†	184259.1	0.04901	mg/L	0.000289	0.04901	mg/L	0.000289	0.59%
Cu 324.752†	61546.4	0.2732	mg/L	0.00094	0.2732	mg/L	0.00094	0.35%
Ag 338.289†	5360.3	0.0549	mg/L	0.00044	0.0549	mg/L	0.00044	0.80%
Na 330.237†	810.3	1.276	mg/L	0.0682	1.276	mg/L	0.0682	5.34%
Ca 227.546†	265.5	1.091	mg/L	0.0108	1.091	mg/L	0.0108	0.99%
Al RADIAL†	2435.9	2.018	mg/L	0.0368	2.018	mg/L	0.0368	1.82%
Fe RADIAL†	459.5	1.172	mg/L	0.0253	1.172	mg/L	0.0253	2.16%
Ca RADIAL†	4106.5	1.025	mg/L	0.0209	1.025	mg/L	0.0209	2.04%
K RADIAL†	1120.2	1.007	mg/L	0.0473	1.007	mg/L	0.0473	4.70%
Mg RADIAL†	461.6	1.015	mg/L	0.0236	1.015	mg/L	0.0236	2.32%
Na RADIAL†	3574.8	1.023	mg/L	0.0240	1.023	mg/L	0.0240	2.34%

Sequence No.: 13
Sample ID: 18J1263-01
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 103
Date Collected: 10/30/2018 5:41:13 PM
Data Type: Reprocessed on 10/31/2018 10:34:06 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15352145.2	4.655	mg/L	0.0467				1.00%
Y RADIAL	247565.6	4.774	mg/L	0.0489				1.02%
As 188.979†	-1.7	-0.0010	mg/L	0.00512	-0.0010	mg/L	0.00512	488.06%
Tl 190.801†	5.2	0.0030	mg/L	0.00581	0.0030	mg/L	0.00581	196.80%
Se 196.026†	186.3	0.0966	mg/L	0.00952	0.0966	mg/L	0.00952	9.85%
Zn 206.200†	55777.1	1.423	mg/L	0.0059	1.423	mg/L	0.0059	0.41%
Sb 206.836†	38.0	0.0160	mg/L	0.00058	0.0160	mg/L	0.00058	3.62%
Pb 220.353†	33.5	0.0038	mg/L	0.00167	0.0038	mg/L	0.00167	43.42%
Cd 226.502†	386.1	0.0026	mg/L	0.00017	0.0026	mg/L	0.00017	6.41%
Co 228.616†	83.2	0.0022	mg/L	0.00010	0.0022	mg/L	0.00010	4.61%
Ni 232.003†	129.9	0.0070	mg/L	0.00160	0.0070	mg/L	0.00160	22.72%
Ba 233.527†	6401.4	0.0733	mg/L	0.00059	0.0733	mg/L	0.00059	0.81%
Mn 257.610†	5067437.8	7.704	mg/L	0.0743	7.704	mg/L	0.0743	0.96%
Cr 267.716†	519.7	0.0037	mg/L	0.00045	0.0037	mg/L	0.00045	12.16%
Fe 273.955†	26899.1	1.217	mg/L	0.0047	1.217	mg/L	0.0047	0.39%
Mg 279.077†	1024792.6	49.00	mg/L	0.185	49.00	mg/L	0.185	0.38%
V 292.402†	-89.9	-0.0005	mg/L	0.00033	-0.0005	mg/L	0.00033	67.66%
Al 308.215†	1059.9	0.0542	mg/L	0.00453	0.0542	mg/L	0.00453	8.36%
Be 313.107†	-420.8	-0.00011	mg/L	0.000015	-0.00011	mg/L	0.000015	13.12%
Cu 324.752†	1381.6	0.0061	mg/L	0.00060	0.0061	mg/L	0.00060	9.82%
Ag 338.289†	175.6	0.0009	mg/L	0.00040	0.0009	mg/L	0.00040	44.28%
Na 330.237†	21642.1	33.99	mg/L	0.118	33.99	mg/L	0.118	0.35%
Ca 227.546†	18934.5	77.03	mg/L	0.738	77.03	mg/L	0.738	0.96%
Al RADIAL†	76.8	0.0614	mg/L	0.00531	0.0614	mg/L	0.00531	8.66%
Fe RADIAL†	481.7	1.229	mg/L	0.0321	1.229	mg/L	0.0321	2.61%
Ca RADIAL†	323449.1	80.76	mg/L	0.183	80.76	mg/L	0.183	0.23%
K RADIAL†	3075.1	2.765	mg/L	0.0564	2.765	mg/L	0.0564	2.04%
Mg RADIAL†	21810.7	47.97	mg/L	0.143	47.97	mg/L	0.143	0.30%
Na RADIAL†	126527.8	36.22	mg/L	0.346	36.22	mg/L	0.346	0.95%

Sequence No.: 14
Sample ID: BJ81616-DUP1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 104
Date Collected: 10/30/2018 5:43:44 PM
Data Type: Reprocessed on 10/31/2018 10:34:06 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: BJ81616-DUP1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15072953.8	4.570	mg/L	0.0273				0.60%
Y RADIAL	242243.2	4.671	mg/L	0.0285				0.61%
As 188.979†	-8.6	-0.0055	mg/L	0.00421	-0.0055	mg/L	0.00421	76.10%
Tl 190.801†	14.3	0.0079	mg/L	0.00439	0.0079	mg/L	0.00439	55.66%
Se 196.026†	202.4	0.1051	mg/L	0.00303	0.1051	mg/L	0.00303	2.89%
Zn 206.200†	873.9	0.0223	mg/L	0.00042	0.0223	mg/L	0.00042	1.90%
Sb 206.836†	41.6	0.0175	mg/L	0.00634	0.0175	mg/L	0.00634	36.15%
Pb 220.353†	30.8	0.0036	mg/L	0.00224	0.0036	mg/L	0.00224	62.32%
Cd 226.502†	258.5	0.0017	mg/L	0.00017	0.0017	mg/L	0.00017	9.74%
Co 228.616†	71.8	0.0019	mg/L	0.00029	0.0019	mg/L	0.00029	15.47%
Ni 232.003†	96.0	0.0052	mg/L	0.00067	0.0052	mg/L	0.00067	12.80%
Ba 233.527†	6425.1	0.0735	mg/L	0.00078	0.0735	mg/L	0.00078	1.06%
Mn 257.610†	5087170.0	7.734	mg/L	0.0349	7.734	mg/L	0.0349	0.45%
Cr 267.716†	565.8	0.0041	mg/L	0.00018	0.0041	mg/L	0.00018	4.43%
Fe 273.955†	27456.9	1.243	mg/L	0.0058	1.243	mg/L	0.0058	0.47%
Mg 279.077†	1029011.9	49.20	mg/L	0.423	49.20	mg/L	0.423	0.86%
V 292.402†	-125.0	-0.0007	mg/L	0.00035	-0.0007	mg/L	0.00035	53.84%
Al 308.215†	753.4	0.0375	mg/L	0.00242	0.0375	mg/L	0.00242	6.46%
Be 313.107†	-548.9	-0.00015	mg/L	0.000027	-0.00015	mg/L	0.000027	18.26%
Cu 324.752†	1628.4	0.0072	mg/L	0.00044	0.0072	mg/L	0.00044	6.08%
Ag 338.289†	145.7	0.0006	mg/L	0.00133	0.0006	mg/L	0.00133	222.94%
Na 330.237†	20845.8	32.74	mg/L	0.220	32.74	mg/L	0.220	0.67%
Ca 227.546†	19259.7	78.35	mg/L	0.821	78.35	mg/L	0.821	1.05%
Al RADIAL†	36.0	0.0276	mg/L	0.00554	0.0276	mg/L	0.00554	20.08%
Fe RADIAL†	487.5	1.244	mg/L	0.0110	1.244	mg/L	0.0110	0.88%
Ca RADIAL†	321838.3	80.36	mg/L	0.210	80.36	mg/L	0.210	0.26%
K RADIAL†	3150.1	2.832	mg/L	0.0398	2.832	mg/L	0.0398	1.41%
Mg RADIAL†	21643.0	47.60	mg/L	0.198	47.60	mg/L	0.198	0.42%
Na RADIAL†	127655.6	36.54	mg/L	0.387	36.54	mg/L	0.387	1.06%

Sequence No.: 15
Sample ID: BJ81616-MS1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 105
Date Collected: 10/30/2018 5:46:15 PM
Data Type: Reprocessed on 10/31/2018 10:34:07 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: BJ81616-MS1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	14808800.4	4.490	mg/L	0.0142				0.32%
Y RADIAL	237361.9	4.577	mg/L	0.0205				0.45%
As 188.979†	2905.3	1.884	mg/L	0.0128	1.884	mg/L	0.0128	0.68%
Tl 190.801†	3777.8	2.034	mg/L	0.0108	2.034	mg/L	0.0108	0.53%
Se 196.026†	3473.6	1.815	mg/L	0.0250	1.815	mg/L	0.0250	1.38%
Zn 206.200†	41902.6	1.069	mg/L	0.0074	1.069	mg/L	0.0074	0.70%
Sb 206.836†	655.0	0.2746	mg/L	0.00696	0.2746	mg/L	0.00696	2.53%
Pb 220.353†	5578.5	0.4702	mg/L	0.00218	0.4702	mg/L	0.00218	0.46%
Cd 226.502†	7001.1	0.0489	mg/L	0.00021	0.0489	mg/L	0.00021	0.42%
Co 228.616†	19217.3	0.4977	mg/L	0.00287	0.4977	mg/L	0.00287	0.58%
Ni 232.003†	9352.8	0.5093	mg/L	0.00191	0.5093	mg/L	0.00191	0.38%
Ba 233.527†	180162.8	2.062	mg/L	0.0237	2.062	mg/L	0.0237	1.15%
Mn 257.610†	5434515.9	8.262	mg/L	0.0146	8.262	mg/L	0.0146	0.18%
Cr 267.716†	28161.3	0.2014	mg/L	0.00239	0.2014	mg/L	0.00239	1.18%
Fe 273.955†	47834.3	2.165	mg/L	0.0258	2.165	mg/L	0.0258	1.19%
Mg 279.077†	1050567.4	50.24	mg/L	0.574	50.24	mg/L	0.574	1.14%
V 292.402†	105143.8	0.4941	mg/L	0.00495	0.4941	mg/L	0.00495	1.00%
Al 308.215†	36815.0	2.006	mg/L	0.0250	2.006	mg/L	0.0250	1.24%
Be 313.107†	179179.2	0.04766	mg/L	0.000561	0.04766	mg/L	0.000561	1.18%
Cu 324.752†	59463.2	0.2639	mg/L	0.00268	0.2639	mg/L	0.00268	1.01%
Ag 338.289†	5340.2	0.0538	mg/L	0.00056	0.0538	mg/L	0.00056	1.04%
Na 330.237†	22221.9	34.90	mg/L	0.449	34.90	mg/L	0.449	1.29%
Ca 227.546†	20213.1	82.24	mg/L	0.423	82.24	mg/L	0.423	0.51%
Al RADIAL†	2461.2	2.036	mg/L	0.0238	2.036	mg/L	0.0238	1.17%
Fe RADIAL†	841.5	2.147	mg/L	0.0169	2.147	mg/L	0.0169	0.79%
Ca RADIAL†	322462.5	80.52	mg/L	0.151	80.52	mg/L	0.151	0.19%
K RADIAL†	4197.7	3.774	mg/L	0.0452	3.774	mg/L	0.0452	1.20%
Mg RADIAL†	21990.8	48.37	mg/L	0.211	48.37	mg/L	0.211	0.44%
Na RADIAL†	133980.3	38.35	mg/L	0.207	38.35	mg/L	0.207	0.54%

Sequence No.: 16
Sample ID: 18J1263-02
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 106
Date Collected: 10/30/2018 5:48:46 PM
Data Type: Reprocessed on 10/31/2018 10:34:07 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15279390.0	4.633	mg/L	0.0253				0.55%
Y RADIAL	232624.1	4.486	mg/L	0.3371				7.52%
As 188.979†	5.5	0.0036	mg/L	0.00177	0.0036	mg/L	0.00177	49.19%
Tl 190.801†	-3.7	-0.0020	mg/L	0.00359	-0.0020	mg/L	0.00359	182.55%
Se 196.026†	64.5	0.0337	mg/L	0.00699	0.0337	mg/L	0.00699	20.71%
Zn 206.200†	2251.5	0.0575	mg/L	0.00027	0.0575	mg/L	0.00027	0.46%
Sb 206.836†	32.0	0.0134	mg/L	0.00361	0.0134	mg/L	0.00361	26.95%
Pb 220.353†	24.5	0.0026	mg/L	0.00180	0.0026	mg/L	0.00180	69.56%
Cd 226.502†	101.7	0.0007	mg/L	0.00003	0.0007	mg/L	0.00003	4.70%
Co 228.616†	-20.5	-0.0005	mg/L	0.00040	-0.0005	mg/L	0.00040	75.98%
Ni 232.003†	-119.5	-0.0065	mg/L	0.00106	-0.0065	mg/L	0.00106	16.35%
Ba 233.527†	3914.7	0.0448	mg/L	0.00020	0.0448	mg/L	0.00020	0.45%
Mn 257.610†	2826.5	0.0043	mg/L	0.00006	0.0043	mg/L	0.00006	1.42%
Cr 267.716†	1734.0	0.0124	mg/L	0.00005	0.0124	mg/L	0.00005	0.43%
Fe 273.955†	119.7	0.0054	mg/L	0.00036	0.0054	mg/L	0.00036	6.67%
Mg 279.077†	341102.2	16.31	mg/L	0.145	16.31	mg/L	0.145	0.89%
V 292.402†	65.4	0.0003	mg/L	0.00034	0.0003	mg/L	0.00034	110.35%
Al 308.215†	287.6	0.0142	mg/L	0.00246	0.0142	mg/L	0.00246	17.34%
Be 313.107†	-522.1	-0.00014	mg/L	0.000024	-0.00014	mg/L	0.000024	17.10%
Cu 324.752†	1170.2	0.0052	mg/L	0.00068	0.0052	mg/L	0.00068	13.11%
Ag 338.289†	123.0	0.0008	mg/L	0.00141	0.0008	mg/L	0.00141	167.63%
Na 330.237†	30912.2	48.47	mg/L	0.263	48.47	mg/L	0.263	0.54%
Ca 227.546†	8759.7	35.63	mg/L	0.073	35.63	mg/L	0.073	0.20%
Al RADIAL†	17.1	0.0131	mg/L	0.02012	0.0131	mg/L	0.02012	153.89%
Fe RADIAL†	-0.1	-0.0004	mg/L	0.01564	-0.0004	mg/L	0.01564	>999.9%
Ca RADIAL†	149749.2	37.39	mg/L	2.632	37.39	mg/L	2.632	7.04%
K RADIAL†	2629.2	2.364	mg/L	0.1997	2.364	mg/L	0.1997	8.45%
Mg RADIAL†	7418.2	16.32	mg/L	1.101	16.32	mg/L	1.101	6.75%
Na RADIAL†	196913.5	56.36	mg/L	4.387	56.36	mg/L	4.387	7.78%

Sequence No.: 17
Sample ID: 18J1263-03
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 107
Date Collected: 10/30/2018 5:51:15 PM
Data Type: Reprocessed on 10/31/2018 10:34:08 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	13715947.6	4.159	mg/L	0.0228				0.55%
Y RADIAL	234448.5	4.521	mg/L	0.0078				0.17%
As 188.979†	14.9	0.0097	mg/L	0.01173	0.0097	mg/L	0.01173	121.12%
Tl 190.801†	-26.2	-0.0141	mg/L	0.00698	-0.0141	mg/L	0.00698	49.38%
Se 196.026†	301.1	0.1574	mg/L	0.00830	0.1574	mg/L	0.00830	5.28%
Zn 206.200†	1527.7	0.0390	mg/L	0.00051	0.0390	mg/L	0.00051	1.30%
Sb 206.836†	36.1	0.0151	mg/L	0.00291	0.0151	mg/L	0.00291	19.27%
Pb 220.353†	-11.1	0.0044	mg/L	0.00111	0.0044	mg/L	0.00111	25.19%
Cd 226.502†	54.8	0.0004	mg/L	0.00010	0.0004	mg/L	0.00010	24.88%
Co 228.616†	37.8	0.0010	mg/L	0.00047	0.0010	mg/L	0.00047	47.51%
Ni 232.003†	6705.8	0.3652	mg/L	0.00410	0.3652	mg/L	0.00410	1.12%
Ba 233.527†	27906.3	0.3194	mg/L	0.00081	0.3194	mg/L	0.00081	0.25%
Mn 257.610†	80844.1	0.1229	mg/L	0.00021	0.1229	mg/L	0.00021	0.17%
Cr 267.716†	542.8	0.0039	mg/L	0.00049	0.0039	mg/L	0.00049	12.67%
Fe 273.955†	310.9	0.0141	mg/L	0.00151	0.0141	mg/L	0.00151	10.76%
Mg 279.077†	2373249.2	113.5	mg/L	0.94	113.5	mg/L	0.94	0.83%
V 292.402†	-11.4	-0.0001	mg/L	0.00067	-0.0001	mg/L	0.00067	>999.9%
Al 308.215†	852.0	0.0331	mg/L	0.00117	0.0331	mg/L	0.00117	3.54%
Be 313.107†	-1605.2	-0.00043	mg/L	0.000019	-0.00043	mg/L	0.000019	4.39%
Cu 324.752†	3272.0	0.0145	mg/L	0.00053	0.0145	mg/L	0.00053	3.63%
Ag 338.289†	540.9	0.0013	mg/L	0.00094	0.0013	mg/L	0.00094	72.92%
Na 330.237†	798028.4	1251	mg/L	7.8	1251	mg/L	7.8	0.62%
Ca 227.546†	96290.2	391.7	mg/L	0.90	391.7	mg/L	0.90	0.23%
Al RADIAL†	44.9	0.0260	mg/L	0.01577	0.0260	mg/L	0.01577	60.71%
Fe RADIAL†	1.1	0.0027	mg/L	0.01427	0.0027	mg/L	0.01427	528.91%
Ca RADIAL†	1510120.0	377.1	mg/L	1.06	377.1	mg/L	1.06	0.28%
K RADIAL†	17988.4	16.17	mg/L	0.170	16.17	mg/L	0.170	1.05%
Mg RADIAL†	50799.3	111.7	mg/L	0.91	111.7	mg/L	0.91	0.81%
Na RADIAL†	3081161.7	881.9	mg/L	7.97	881.9	mg/L	7.97	0.90%

Sequence No.: 18
Sample ID: 18J1263-04
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 108
Date Collected: 10/30/2018 5:54:04 PM
Data Type: Reprocessed on 10/31/2018 10:34:08 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	15116691.7	4.584	mg/L	0.0342				0.75%
Y RADIAL	241128.0	4.650	mg/L	0.1317				2.83%
As 188.979†	-2.1	-0.0013	mg/L	0.00371	-0.0013	mg/L	0.00371	278.38%
Tl 190.801†	-5.2	-0.0028	mg/L	0.00867	-0.0028	mg/L	0.00867	311.43%
Se 196.026†	315.6	0.1649	mg/L	0.00953	0.1649	mg/L	0.00953	5.78%
Zn 206.200†	3270.4	0.0834	mg/L	0.00165	0.0834	mg/L	0.00165	1.98%
Sb 206.836†	34.9	0.0146	mg/L	0.00410	0.0146	mg/L	0.00410	28.00%
Pb 220.353†	-3.5	0.0025	mg/L	0.00211	0.0025	mg/L	0.00211	83.44%
Cd 226.502†	85.7	0.0006	mg/L	0.00006	0.0006	mg/L	0.00006	10.73%
Co 228.616†	-28.7	-0.0007	mg/L	0.00017	-0.0007	mg/L	0.00017	22.35%
Ni 232.003†	-63.7	-0.0035	mg/L	0.00152	-0.0035	mg/L	0.00152	43.71%
Ba 233.527†	1797.7	0.0206	mg/L	0.00017	0.0206	mg/L	0.00017	0.83%
Mn 257.610†	2036.1	0.0031	mg/L	0.00007	0.0031	mg/L	0.00007	2.12%
Cr 267.716†	3205.7	0.0229	mg/L	0.00030	0.0229	mg/L	0.00030	1.32%
Fe 273.955†	2108.6	0.0954	mg/L	0.00078	0.0954	mg/L	0.00078	0.82%
Mg 279.077†	2692628.6	128.8	mg/L	0.71	128.8	mg/L	0.71	0.55%
V 292.402†	353.9	0.0017	mg/L	0.00009	0.0017	mg/L	0.00009	5.42%
Al 308.215†	646.7	0.0255	mg/L	0.00697	0.0255	mg/L	0.00697	27.30%
Be 313.107†	-945.0	-0.00025	mg/L	0.000064	-0.00025	mg/L	0.000064	25.60%
Cu 324.752†	2734.4	0.0121	mg/L	0.00076	0.0121	mg/L	0.00076	6.24%
Ag 338.289†	400.3	0.0018	mg/L	0.00103	0.0018	mg/L	0.00103	55.88%
Na 330.237†	69104.3	108.5	mg/L	1.55	108.5	mg/L	1.55	1.43%
Ca 227.546†	47435.1	193.0	mg/L	3.71	193.0	mg/L	3.71	1.92%
Al RADIAL†	34.9	0.0230	mg/L	0.01510	0.0230	mg/L	0.01510	65.79%
Fe RADIAL†	37.9	0.0968	mg/L	0.00974	0.0968	mg/L	0.00974	10.07%
Ca RADIAL†	801792.9	200.2	mg/L	5.54	200.2	mg/L	5.54	2.76%
K RADIAL†	5478.3	4.925	mg/L	0.0959	4.925	mg/L	0.0959	1.95%
Mg RADIAL†	59191.1	130.2	mg/L	3.58	130.2	mg/L	3.58	2.75%
Na RADIAL†	364724.0	104.4	mg/L	2.89	104.4	mg/L	2.89	2.77%

Sequence No.: 19
Sample ID: 18J1263-05
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 109
Date Collected: 10/30/2018 5:56:46 PM
Data Type: Reprocessed on 10/31/2018 10:34:09 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	14801566.7	4.488	mg/L	0.0080				0.18%
Y RADIAL	241803.6	4.663	mg/L	0.0361				0.77%
As 188.979†	2.2	0.0014	mg/L	0.00701	0.0014	mg/L	0.00701	501.85%
Tl 190.801†	-0.5	-0.0002	mg/L	0.00454	-0.0002	mg/L	0.00454	>999.9%
Se 196.026†	135.6	0.0708	mg/L	0.01214	0.0708	mg/L	0.01214	17.14%
Zn 206.200†	914.9	0.0233	mg/L	0.00021	0.0233	mg/L	0.00021	0.89%
Sb 206.836†	23.9	0.0100	mg/L	0.00158	0.0100	mg/L	0.00158	15.81%
Pb 220.353†	17.9	0.0030	mg/L	0.00315	0.0030	mg/L	0.00315	105.84%
Cd 226.502†	52.2	0.0004	mg/L	0.00007	0.0004	mg/L	0.00007	19.30%
Co 228.616†	53.3	0.0014	mg/L	0.00040	0.0014	mg/L	0.00040	28.88%
Ni 232.003†	191.0	0.0104	mg/L	0.00158	0.0104	mg/L	0.00158	15.15%
Ba 233.527†	38203.9	0.4373	mg/L	0.00274	0.4373	mg/L	0.00274	0.63%
Mn 257.610†	2038959.0	3.100	mg/L	0.0242	3.100	mg/L	0.0242	0.78%
Cr 267.716†	333.6	0.0024	mg/L	0.00009	0.0024	mg/L	0.00009	3.56%
Fe 273.955†	2299.5	0.1041	mg/L	0.00068	0.1041	mg/L	0.00068	0.65%
Mg 279.077†	744388.8	35.59	mg/L	0.345	35.59	mg/L	0.345	0.97%
V 292.402†	-76.7	-0.0004	mg/L	0.00006	-0.0004	mg/L	0.00006	15.58%
Al 308.215†	620.9	0.0300	mg/L	0.00271	0.0300	mg/L	0.00271	9.04%
Be 313.107†	-1114.3	-0.00030	mg/L	0.000022	-0.00030	mg/L	0.000022	7.26%
Cu 324.752†	1847.6	0.0082	mg/L	0.00041	0.0082	mg/L	0.00041	4.96%
Ag 338.289†	189.9	0.0008	mg/L	0.00161	0.0008	mg/L	0.00161	209.91%
Na 330.237†	268537.4	420.8	mg/L	2.06	420.8	mg/L	2.06	0.49%
Ca 227.546†	25190.8	102.5	mg/L	0.86	102.5	mg/L	0.86	0.84%
Al RADIAL†	-6.5	-0.0084	mg/L	0.03912	-0.0084	mg/L	0.03912	463.18%
Fe RADIAL†	37.1	0.0946	mg/L	0.00932	0.0946	mg/L	0.00932	9.85%
Ca RADIAL†	418503.9	104.5	mg/L	0.17	104.5	mg/L	0.17	0.17%
K RADIAL†	3709.1	3.335	mg/L	0.0426	3.335	mg/L	0.0426	1.28%
Mg RADIAL†	16536.5	36.37	mg/L	0.640	36.37	mg/L	0.640	1.76%
Na RADIAL†	1227956.6	351.5	mg/L	1.09	351.5	mg/L	1.09	0.31%

Sequence No.: 20
Sample ID: 18J1263-06
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 110
Date Collected: 10/30/2018 5:59:28 PM
Data Type: Reprocessed on 10/31/2018 10:34:09 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-06

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	14229779.9	4.315	mg/L	0.0221				0.51%
Y RADIAL	233314.5	4.499	mg/L	0.0784				1.74%
As 188.979†	1.8	0.0019	mg/L	0.00710	0.0019	mg/L	0.00710	366.59%
Tl 190.801†	40.3	0.0249	mg/L	0.00359	0.0249	mg/L	0.00359	14.43%
Se 196.026†	146.0	0.0628	mg/L	0.00860	0.0628	mg/L	0.00860	13.69%
Zn 206.200†	2495.3	0.0635	mg/L	0.00053	0.0635	mg/L	0.00053	0.84%
Sb 206.836†	15.7	0.0086	mg/L	0.00410	0.0086	mg/L	0.00410	47.50%
Pb 220.353†	19.0	0.0031	mg/L	0.00128	0.0031	mg/L	0.00128	41.83%
Cd 226.502†	238.0	0.0000	mg/L	0.00005	0.0000	mg/L	0.00005	214.07%
Co 228.616†	56.6	0.0021	mg/L	0.00015	0.0021	mg/L	0.00015	7.13%
Ni 232.003†	-72.0	-0.0045	mg/L	0.00106	-0.0045	mg/L	0.00106	23.78%
Ba 233.527†	85965.5	0.9840	mg/L	0.01006	0.9840	mg/L	0.01006	1.02%
Mn 257.610†	11171092.7	16.99	mg/L	0.102	16.99	mg/L	0.102	0.60%
Cr 267.716†	877.7	0.0065	mg/L	0.00030	0.0065	mg/L	0.00030	4.55%
Fe 273.955†	472844.4	21.40	mg/L	0.239	21.40	mg/L	0.239	1.12%
Mg 279.077†	911543.1	43.58	mg/L	0.449	43.58	mg/L	0.449	1.03%
V 292.402†	-198.3	-0.0021	mg/L	0.00029	-0.0021	mg/L	0.00029	13.79%
Al 308.215†	928.5	0.0443	mg/L	0.00945	0.0443	mg/L	0.00945	21.33%
Be 313.107†	-1298.8	-0.00035	mg/L	0.000055	-0.00035	mg/L	0.000055	16.06%
Cu 324.752†	1404.1	0.0061	mg/L	0.00018	0.0061	mg/L	0.00018	2.89%
Ag 338.289†	294.4	0.0002	mg/L	0.00107	0.0002	mg/L	0.00107	448.12%
Na 330.237†	413054.6	647.5	mg/L	8.53	647.5	mg/L	8.53	1.32%
Ca 227.546†	66468.7	270.6	mg/L	2.75	270.6	mg/L	2.75	1.02%
Al RADIAL†	31.0	0.0201	mg/L	0.01421	0.0201	mg/L	0.01421	70.83%
Fe RADIAL†	8599.0	21.94	mg/L	0.267	21.94	mg/L	0.267	1.22%
Ca RADIAL†	1063394.6	265.5	mg/L	0.65	265.5	mg/L	0.65	0.25%
K RADIAL†	13749.8	12.36	mg/L	0.104	12.36	mg/L	0.104	0.84%
Mg RADIAL†	20331.6	44.72	mg/L	0.609	44.72	mg/L	0.609	1.36%
Na RADIAL†	1782200.1	510.1	mg/L	4.50	510.1	mg/L	4.50	0.88%

Sequence No.: 21
Sample ID: SEQ-CCV2
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 9
Date Collected: 10/30/2018 6:01:35 PM
Data Type: Reprocessed on 10/31/2018 10:34:10 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCV2

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Calib. Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Y 371.029	15458469.8	4.687	mg/L	0.0157				0.34%
Y RADIAL	249790.9	4.817	mg/L	0.0273				0.57%
As 188.979†	729.9	0.4735	mg/L	0.00268	0.4735	mg/L	0.00268	0.57%
Tl 190.801†	989.2	0.5333	mg/L	0.00208	0.5333	mg/L	0.00208	0.39%
Se 196.026†	921.6	0.4787	mg/L	0.01942	0.4787	mg/L	0.01942	4.06%
Zn 206.200†	94448.9	2.410	mg/L	0.0547	2.410	mg/L	0.0547	2.27%
Sb 206.836†	600.5	0.2520	mg/L	0.00168	0.2520	mg/L	0.00168	0.67%
Pb 220.353†	5819.6	0.4904	mg/L	0.00047	0.4904	mg/L	0.00047	0.09%
Cd 226.502†	34662.1	0.2424	mg/L	0.00485	0.2424	mg/L	0.00485	2.00%
Co 228.616†	96845.8	2.508	mg/L	0.0451	2.508	mg/L	0.0451	1.80%
Ni 232.003†	46079.8	2.509	mg/L	0.0427	2.509	mg/L	0.0427	1.70%
Ba 233.527†	891148.2	10.20	mg/L	0.164	10.20	mg/L	0.164	1.61%
Mn 257.610†	1664608.0	2.531	mg/L	0.0414	2.531	mg/L	0.0414	1.64%
Cr 267.716†	141088.9	1.009	mg/L	0.0173	1.009	mg/L	0.0173	1.71%
Fe 273.955†	110761.2	5.012	mg/L	0.0885	5.012	mg/L	0.0885	1.77%
Mg 279.077†	516368.8	24.69	mg/L	0.458	24.69	mg/L	0.458	1.86%
V 292.402†	536212.8	2.520	mg/L	0.0396	2.520	mg/L	0.0396	1.57%
Al 308.215†	183599.3	10.02	mg/L	0.161	10.02	mg/L	0.161	1.60%
Be 313.107†	931590.2	0.24780	mg/L	0.003759	0.24780	mg/L	0.003759	1.52%
Cu 324.752†	288518.6	1.281	mg/L	0.0193	1.281	mg/L	0.0193	1.50%
Ag 338.289†	124287.9	1.273	mg/L	0.0178	1.273	mg/L	0.0178	1.40%
Na 330.237†	15171.8	23.82	mg/L	0.366	23.82	mg/L	0.366	1.54%
Ca 227.546†	6135.5	25.01	mg/L	0.127	25.01	mg/L	0.127	0.51%
Al RADIAL†	12133.2	10.05	mg/L	0.113	10.05	mg/L	0.113	1.12%
Fe RADIAL†	1930.6	4.925	mg/L	0.0638	4.925	mg/L	0.0638	1.30%
Ca RADIAL†	97569.9	24.36	mg/L	0.055	24.36	mg/L	0.055	0.23%
K RADIAL†	5616.7	5.050	mg/L	0.0124	5.050	mg/L	0.0124	0.24%
Mg RADIAL†	11189.9	24.61	mg/L	0.237	24.61	mg/L	0.237	0.96%
Na RADIAL†	85438.5	24.46	mg/L	0.057	24.46	mg/L	0.057	0.23%

Sequence No.: 22
Sample ID: SEQ-CCB2
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 10/30/2018 6:04:06 PM
Data Type: Reprocessed on 10/31/2018 10:34:10 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCB2

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15617301.6	4.736	mg/L	0.0450				0.95%
Y RADIAL	249157.8	4.804	mg/L	0.0770				1.60%
As 188.979†	-9.5	-0.0062	mg/L	0.00292	-0.0062	mg/L	0.00292	47.17%
Tl 190.801†	-14.2	-0.0077	mg/L	0.00705	-0.0077	mg/L	0.00705	92.01%
Se 196.026†	-12.0	-0.0063	mg/L	0.00487	-0.0063	mg/L	0.00487	77.68%
Zn 206.200†	24.7	0.0006	mg/L	0.00020	0.0006	mg/L	0.00020	32.48%
Sb 206.836†	-4.1	-0.0017	mg/L	0.00252	-0.0017	mg/L	0.00252	145.58%
Pb 220.353†	14.9	0.0013	mg/L	0.00086	0.0013	mg/L	0.00086	67.80%
Cd 226.502†	12.9	0.0001	mg/L	0.00012	0.0001	mg/L	0.00012	130.87%
Co 228.616†	-30.9	-0.0008	mg/L	0.00020	-0.0008	mg/L	0.00020	25.09%
Ni 232.003†	-90.0	-0.0049	mg/L	0.00028	-0.0049	mg/L	0.00028	5.66%
Ba 233.527†	4.2	0.0000	mg/L	0.00029	0.0000	mg/L	0.00029	601.35%
Mn 257.610†	11.4	0.0000	mg/L	0.00001	0.0000	mg/L	0.00001	85.04%
Cr 267.716†	-8.3	-0.0001	mg/L	0.00098	-0.0001	mg/L	0.00098	>999.9%
Fe 273.955†	-22.2	-0.0010	mg/L	0.00058	-0.0010	mg/L	0.00058	57.69%
Mg 279.077†	16.8	0.0008	mg/L	0.00378	0.0008	mg/L	0.00378	469.97%
V 292.402†	63.3	0.0003	mg/L	0.00021	0.0003	mg/L	0.00021	71.75%
Al 308.215†	115.1	0.0063	mg/L	0.00303	0.0063	mg/L	0.00303	48.23%
Be 313.107†	-293.6	-0.00008	mg/L	0.000042	-0.00008	mg/L	0.000042	54.01%
Cu 324.752†	265.7	0.0012	mg/L	0.00019	0.0012	mg/L	0.00019	16.49%
Ag 338.289†	79.8	0.0008	mg/L	0.00170	0.0008	mg/L	0.00170	207.95%
Na 330.237†	13.3	0.0209	mg/L	0.02410	0.0209	mg/L	0.02410	115.42%
Ca 227.546†	0.0	0.0002	mg/L	0.08315	0.0002	mg/L	0.08315	>999.9%
Al RADIAL†	59.8	0.0495	mg/L	0.01511	0.0495	mg/L	0.01511	30.51%
Fe RADIAL†	0.9	0.0024	mg/L	0.00475	0.0024	mg/L	0.00475	198.90%
Ca RADIAL†	-45.2	-0.0113	mg/L	0.00817	-0.0113	mg/L	0.00817	72.34%
K RADIAL†	93.8	0.0843	mg/L	0.00168	0.0843	mg/L	0.00168	1.99%
Mg RADIAL†	-1.0	-0.0022	mg/L	0.01868	-0.0022	mg/L	0.01868	831.14%
Na RADIAL†	332.3	0.0951	mg/L	0.04355	0.0951	mg/L	0.04355	45.79%

Sequence No.: 23
Sample ID: 18J1263-07
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 111
Date Collected: 10/30/2018 6:06:36 PM
Data Type: Reprocessed on 10/31/2018 10:34:11 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	14751826.1	4.473	mg/L	0.1161				2.60%
Y RADIAL	244324.3	4.711	mg/L	0.0276				0.59%
As 188.979†	-12.6	-0.0082	mg/L	0.00660	-0.0082	mg/L	0.00660	80.61%
Tl 190.801†	-15.6	-0.0084	mg/L	0.00399	-0.0084	mg/L	0.00399	47.66%
Se 196.026†	61.3	0.0320	mg/L	0.01261	0.0320	mg/L	0.01261	39.40%
Zn 206.200†	1012.8	0.0258	mg/L	0.00069	0.0258	mg/L	0.00069	2.67%
Sb 206.836†	23.2	0.0097	mg/L	0.00527	0.0097	mg/L	0.00527	54.18%
Pb 220.353†	22.9	0.0027	mg/L	0.00230	0.0027	mg/L	0.00230	85.86%
Cd 226.502†	-8.5	-0.0001	mg/L	0.00012	-0.0001	mg/L	0.00012	187.71%
Co 228.616†	-39.9	-0.0010	mg/L	0.00035	-0.0010	mg/L	0.00035	34.06%
Ni 232.003†	-145.6	-0.0079	mg/L	0.00229	-0.0079	mg/L	0.00229	28.83%
Ba 233.527†	3045.6	0.0349	mg/L	0.00077	0.0349	mg/L	0.00077	2.22%
Mn 257.610†	17084.8	0.0260	mg/L	0.00031	0.0260	mg/L	0.00031	1.19%
Cr 267.716†	1050.4	0.0075	mg/L	0.00029	0.0075	mg/L	0.00029	3.81%
Fe 273.955†	2355.1	0.1066	mg/L	0.00435	0.1066	mg/L	0.00435	4.08%
Mg 279.077†	389176.3	18.61	mg/L	0.112	18.61	mg/L	0.112	0.60%
V 292.402†	275.9	0.0013	mg/L	0.00013	0.0013	mg/L	0.00013	9.88%
Al 308.215†	852.6	0.0446	mg/L	0.00787	0.0446	mg/L	0.00787	17.65%
Be 313.107†	-830.1	-0.00022	mg/L	0.000074	-0.00022	mg/L	0.000074	33.55%
Cu 324.752†	1646.6	0.0073	mg/L	0.00049	0.0073	mg/L	0.00049	6.77%
Ag 338.289†	119.6	0.0006	mg/L	0.00113	0.0006	mg/L	0.00113	180.70%
Na 330.237†	16036.4	25.18	mg/L	0.256	25.18	mg/L	0.256	1.02%
Ca 227.546†	13271.4	53.98	mg/L	1.023	53.98	mg/L	1.023	1.90%
Al RADIAL†	34.5	0.0270	mg/L	0.01767	0.0270	mg/L	0.01767	65.40%
Fe RADIAL†	34.8	0.0889	mg/L	0.00971	0.0889	mg/L	0.00971	10.93%
Ca RADIAL†	212559.0	53.07	mg/L	0.073	53.07	mg/L	0.073	0.14%
K RADIAL†	3643.1	3.275	mg/L	0.0123	3.275	mg/L	0.0123	0.38%
Mg RADIAL†	7851.9	17.27	mg/L	0.036	17.27	mg/L	0.036	0.21%
Na RADIAL†	99494.2	28.48	mg/L	0.065	28.48	mg/L	0.065	0.23%

Sequence No.: 24
Sample ID: 18J1263-08
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 112
Date Collected: 10/30/2018 6:09:05 PM
Data Type: Reprocessed on 10/31/2018 10:34:11 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-08

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15321486.3	4.646	mg/L	0.0278				0.60%
Y RADIAL	248130.1	4.785	mg/L	0.0251				0.53%
As 188.979†	12.4	0.0081	mg/L	0.00453	0.0081	mg/L	0.00453	56.14%
Tl 190.801†	18.8	0.0102	mg/L	0.00193	0.0102	mg/L	0.00193	18.80%
Se 196.026†	171.3	0.0891	mg/L	0.00574	0.0891	mg/L	0.00574	6.44%
Zn 206.200†	1748.3	0.0446	mg/L	0.00053	0.0446	mg/L	0.00053	1.19%
Sb 206.836†	15.0	0.0064	mg/L	0.00457	0.0064	mg/L	0.00457	71.82%
Pb 220.353†	13.3	0.0022	mg/L	0.00100	0.0022	mg/L	0.00100	46.00%
Cd 226.502†	10.7	0.0000	mg/L	0.00004	0.0000	mg/L	0.00004	275.39%
Co 228.616†	106.4	0.0028	mg/L	0.00035	0.0028	mg/L	0.00035	12.72%
Ni 232.003†	140.1	0.0076	mg/L	0.00097	0.0076	mg/L	0.00097	12.80%
Ba 233.527†	6520.3	0.0746	mg/L	0.00068	0.0746	mg/L	0.00068	0.91%
Mn 257.610†	5249274.1	7.980	mg/L	0.0872	7.980	mg/L	0.0872	1.09%
Cr 267.716†	581.9	0.0042	mg/L	0.00031	0.0042	mg/L	0.00031	7.33%
Fe 273.955†	17515.2	0.7926	mg/L	0.00402	0.7926	mg/L	0.00402	0.51%
Mg 279.077†	1043931.5	49.92	mg/L	0.393	49.92	mg/L	0.393	0.79%
V 292.402†	-238.2	-0.0012	mg/L	0.00029	-0.0012	mg/L	0.00029	24.93%
Al 308.215†	1185.0	0.0610	mg/L	0.00414	0.0610	mg/L	0.00414	6.79%
Be 313.107†	-548.4	-0.00015	mg/L	0.000050	-0.00015	mg/L	0.000050	34.11%
Cu 324.752†	1448.7	0.0064	mg/L	0.00023	0.0064	mg/L	0.00023	3.66%
Ag 338.289†	182.9	0.0010	mg/L	0.00031	0.0010	mg/L	0.00031	31.40%
Na 330.237†	20669.0	32.46	mg/L	0.518	32.46	mg/L	0.518	1.59%
Ca 227.546†	18828.1	76.59	mg/L	0.711	76.59	mg/L	0.711	0.93%
Al RADIAL†	70.7	0.0563	mg/L	0.01326	0.0563	mg/L	0.01326	23.55%
Fe RADIAL†	311.2	0.7938	mg/L	0.01459	0.7938	mg/L	0.01459	1.84%
Ca RADIAL†	320569.8	80.04	mg/L	0.167	80.04	mg/L	0.167	0.21%
K RADIAL†	3154.3	2.836	mg/L	0.0687	2.836	mg/L	0.0687	2.42%
Mg RADIAL†	21794.5	47.93	mg/L	0.190	47.93	mg/L	0.190	0.40%
Na RADIAL†	125724.8	35.99	mg/L	0.089	35.99	mg/L	0.089	0.25%

Sequence No.: 25
Sample ID: 18J1263-10
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 113
Date Collected: 10/30/2018 6:11:35 PM
Data Type: Reprocessed on 10/31/2018 10:34:12 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-10

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16427933.0	4.981	mg/L	0.0364				0.73%
Y RADIAL	260145.9	5.016	mg/L	0.0499				1.00%
As 188.979†	-4.2	-0.0027	mg/L	0.00123	-0.0027	mg/L	0.00123	45.40%
Tl 190.801†	2.0	0.0011	mg/L	0.00152	0.0011	mg/L	0.00152	137.54%
Se 196.026†	1.0	0.0005	mg/L	0.00359	0.0005	mg/L	0.00359	703.71%
Zn 206.200†	562.5	0.0144	mg/L	0.00030	0.0144	mg/L	0.00030	2.11%
Sb 206.836†	11.3	0.0047	mg/L	0.00116	0.0047	mg/L	0.00116	24.55%
Pb 220.353†	50.5	0.0042	mg/L	0.00109	0.0042	mg/L	0.00109	25.57%
Cd 226.502†	-5.5	0.0000	mg/L	0.00006	0.0000	mg/L	0.00006	157.77%
Co 228.616†	-25.6	-0.0007	mg/L	0.00056	-0.0007	mg/L	0.00056	84.77%
Ni 232.003†	-56.6	-0.0031	mg/L	0.00028	-0.0031	mg/L	0.00028	9.09%
Ba 233.527†	24.8	0.0003	mg/L	0.00011	0.0003	mg/L	0.00011	37.37%
Mn 257.610†	823.8	0.0013	mg/L	0.00004	0.0013	mg/L	0.00004	3.02%
Cr 267.716†	-11.5	-0.0001	mg/L	0.00024	-0.0001	mg/L	0.00024	293.55%
Fe 273.955†	953.0	0.0431	mg/L	0.00032	0.0431	mg/L	0.00032	0.74%
Mg 279.077†	240.9	0.0115	mg/L	0.00085	0.0115	mg/L	0.00085	7.36%
V 292.402†	6.0	0.0000	mg/L	0.00013	0.0000	mg/L	0.00013	503.34%
Al 308.215†	-186.6	-0.0102	mg/L	0.00773	-0.0102	mg/L	0.00773	75.88%
Be 313.107†	-419.3	-0.00011	mg/L	0.000015	-0.00011	mg/L	0.000015	13.22%
Cu 324.752†	213.7	0.0009	mg/L	0.00060	0.0009	mg/L	0.00060	63.19%
Ag 338.289†	88.3	0.0009	mg/L	0.00067	0.0009	mg/L	0.00067	73.94%
Na 330.237†	32.4	0.0509	mg/L	0.15396	0.0509	mg/L	0.15396	302.35%
Ca 227.546†	10.9	0.0446	mg/L	0.02042	0.0446	mg/L	0.02042	45.82%
Al RADIAL†	2.9	0.0024	mg/L	0.01763	0.0024	mg/L	0.01763	733.41%
Fe RADIAL†	14.0	0.0357	mg/L	0.01147	0.0357	mg/L	0.01147	32.11%
Ca RADIAL†	181.3	0.0453	mg/L	0.00958	0.0453	mg/L	0.00958	21.16%
K RADIAL†	109.3	0.0983	mg/L	0.01301	0.0983	mg/L	0.01301	13.24%
Mg RADIAL†	10.7	0.0236	mg/L	0.00223	0.0236	mg/L	0.00223	9.46%
Na RADIAL†	760.0	0.2175	mg/L	0.00156	0.2175	mg/L	0.00156	0.72%

Sequence No.: 33
Sample ID: SEQ-CCV3
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 9
Date Collected: 10/30/2018 6:29:57 PM
Data Type: Reprocessed on 10/31/2018 10:34:16 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCV3

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15919887.9	4.827	mg/L	0.0394				0.82%
Y RADIAL	256894.4	4.954	mg/L	0.0594				1.20%
As 188.979†	786.9	0.5104	mg/L	0.00530	0.5104	mg/L	0.00530	1.04%
Tl 190.801†	956.4	0.5157	mg/L	0.00996	0.5157	mg/L	0.00996	1.93%
Se 196.026†	985.7	0.5122	mg/L	0.00765	0.5122	mg/L	0.00765	1.49%
Zn 206.200†	99643.7	2.543	mg/L	0.0202	2.543	mg/L	0.0202	0.80%
Sb 206.836†	607.0	0.2548	mg/L	0.00774	0.2548	mg/L	0.00774	3.04%
Pb 220.353†	6085.1	0.5127	mg/L	0.00244	0.5127	mg/L	0.00244	0.48%
Cd 226.502†	36231.6	0.2534	mg/L	0.00255	0.2534	mg/L	0.00255	1.01%
Co 228.616†	99934.0	2.588	mg/L	0.0228	2.588	mg/L	0.0228	0.88%
Ni 232.003†	47253.7	2.573	mg/L	0.0235	2.573	mg/L	0.0235	0.91%
Ba 233.527†	912614.1	10.45	mg/L	0.084	10.45	mg/L	0.084	0.81%
Mn 257.610†	1705689.7	2.594	mg/L	0.0227	2.594	mg/L	0.0227	0.88%
Cr 267.716†	144619.6	1.034	mg/L	0.0077	1.034	mg/L	0.0077	0.74%
Fe 273.955†	114335.5	5.174	mg/L	0.0456	5.174	mg/L	0.0456	0.88%
Mg 279.077†	541310.7	25.88	mg/L	0.212	25.88	mg/L	0.212	0.82%
V 292.402†	546025.3	2.566	mg/L	0.0147	2.566	mg/L	0.0147	0.57%
Al 308.215†	185791.5	10.14	mg/L	0.094	10.14	mg/L	0.094	0.93%
Be 313.107†	959209.4	0.25515	mg/L	0.001368	0.25515	mg/L	0.001368	0.54%
Cu 324.752†	289803.2	1.286	mg/L	0.0118	1.286	mg/L	0.0118	0.92%
Ag 338.289†	125465.0	1.285	mg/L	0.0110	1.285	mg/L	0.0110	0.86%
Na 330.237†	15265.8	23.96	mg/L	0.323	23.96	mg/L	0.323	1.35%
Ca 227.546†	6203.5	25.28	mg/L	0.161	25.28	mg/L	0.161	0.64%
Al RADIAL†	12044.2	9.976	mg/L	0.1170	9.976	mg/L	0.1170	1.17%
Fe RADIAL†	1986.4	5.067	mg/L	0.0833	5.067	mg/L	0.0833	1.64%
Ca RADIAL†	100409.7	25.07	mg/L	0.056	25.07	mg/L	0.056	0.22%
K RADIAL†	5480.3	4.927	mg/L	0.0368	4.927	mg/L	0.0368	0.75%
Mg RADIAL†	11607.0	25.53	mg/L	0.388	25.53	mg/L	0.388	1.52%
Na RADIAL†	84479.7	24.18	mg/L	0.056	24.18	mg/L	0.056	0.23%

Sequence No.: 34
Sample ID: SEQ-CCB3
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 10/30/2018 6:32:28 PM
Data Type: Reprocessed on 10/31/2018 10:34:16 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCB3

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16706448.2	5.066	mg/L	0.0181				0.36%
Y RADIAL	269310.7	5.193	mg/L	0.0713				1.37%
As 188.979†	5.3	0.0035	mg/L	0.00167	0.0035	mg/L	0.00167	48.44%
Tl 190.801†	3.0	0.0016	mg/L	0.00441	0.0016	mg/L	0.00441	272.30%
Se 196.026†	-8.1	-0.0042	mg/L	0.00301	-0.0042	mg/L	0.00301	71.28%
Zn 206.200†	22.6	0.0006	mg/L	0.00028	0.0006	mg/L	0.00028	48.65%
Sb 206.836†	1.6	0.0007	mg/L	0.00141	0.0007	mg/L	0.00141	205.49%
Pb 220.353†	35.9	0.0030	mg/L	0.00138	0.0030	mg/L	0.00138	45.61%
Cd 226.502†	-10.1	-0.0001	mg/L	0.00008	-0.0001	mg/L	0.00008	109.58%
Co 228.616†	-10.1	-0.0003	mg/L	0.00011	-0.0003	mg/L	0.00011	42.25%
Ni 232.003†	-16.7	-0.0009	mg/L	0.00078	-0.0009	mg/L	0.00078	86.33%
Ba 233.527†	-7.5	-0.0001	mg/L	0.00021	-0.0001	mg/L	0.00021	247.10%
Mn 257.610†	-48.0	-0.0001	mg/L	0.00001	-0.0001	mg/L	0.00001	15.34%
Cr 267.716†	34.7	0.0002	mg/L	0.00008	0.0002	mg/L	0.00008	30.44%
Fe 273.955†	-8.5	-0.0004	mg/L	0.00065	-0.0004	mg/L	0.00065	170.12%
Mg 279.077†	23.9	0.0011	mg/L	0.00228	0.0011	mg/L	0.00228	199.18%
V 292.402†	26.0	0.0001	mg/L	0.00030	0.0001	mg/L	0.00030	246.21%
Al 308.215†	97.4	0.0053	mg/L	0.00529	0.0053	mg/L	0.00529	99.55%
Be 313.107†	-290.5	-0.00008	mg/L	0.000068	-0.00008	mg/L	0.000068	87.92%
Cu 324.752†	146.9	0.0007	mg/L	0.00014	0.0007	mg/L	0.00014	21.16%
Ag 338.289†	88.8	0.0009	mg/L	0.00069	0.0009	mg/L	0.00069	75.52%
Na 330.237†	-56.5	-0.0885	mg/L	0.07463	-0.0885	mg/L	0.07463	84.32%
Ca 227.546†	-3.4	-0.0138	mg/L	0.09095	-0.0138	mg/L	0.09095	658.40%
Al RADIAL†	44.5	0.0368	mg/L	0.02113	0.0368	mg/L	0.02113	57.34%
Fe RADIAL†	-3.1	-0.0080	mg/L	0.00817	-0.0080	mg/L	0.00817	101.87%
Ca RADIAL†	-80.2	-0.0200	mg/L	0.00379	-0.0200	mg/L	0.00379	18.92%
K RADIAL†	58.5	0.0526	mg/L	0.02569	0.0526	mg/L	0.02569	48.82%
Mg RADIAL†	6.1	0.0134	mg/L	0.01596	0.0134	mg/L	0.01596	119.20%
Na RADIAL†	222.3	0.0636	mg/L	0.01746	0.0636	mg/L	0.01746	27.44%

Sample Information Detail Report
Document Name: 103118a

File Description
Sample Information File

Parameters Common to All Samples

Batch ID	qbi103118a
Analyst Name	KML
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Remarks
1	3	SEQ-ICV1	
2	4	SEQ-ICB1	
3	5	SEQ-CRL1	
4	6	SEQ-CRL2	
5	7	SEQ-IFA1	
6	8	SEQ-IFB1	
7	9	SEQ-CCV1	
8	4	SEQ-CCB1	
9	101	BJ81691-BLK1	
10	102	BJ81691-LBK1	
11	103	BJ81691-BS1	
12	104	18J1303-01	
13	105	18J1314-06	
14	106	18J1314-18	
15	107	18J1314-30	
16	108	18J1318-01	
17	109	18J1320-06	
18	110	18J1320-18	
19	9	SEQ-CCV2	
20	4	SEQ-CCB2	
21	111	18J1320-30	
22	112	18J1331-01	
23	113	18J1331-02	
24	114	18J1332-06	
25	115	18J1332-18	
26	116	18J1332-30	
27	117	18J1332-42	
28	118	18J1332-54	
29	119	BJ81691-DUP1	
30	120	BJ81691-MS1	
31	9	SEQ-CCV3	
32	4	SEQ-CCB3	
33	121	SEQ-SRD1	18J1332-54
34	122	BJ81740-BLK1	
35	123	BJ81740-SRM1	
36	124	18J1417-01	
37	125	18J1420-01	
38	126	18J1424-01	
39	127	18J1430-01	
40	128	18J1433-01	
41	129	18J1433-02	
42	130	18J1433-03	
43	9	SEQ-CCV4	
44	4	SEQ-CCB4	
45	131	18J1433-04	
46	132	18J1433-05	
47	133	18J1438-01	
48	134	18J1438-02	
49	135	18J1438-03	
50	136	18J1438-04	
51	137	BJ81740-DUP1	

52	138	BJ81740-MS1	
53	139	18J1457-01	
54	140	18J1457-05	
55	9	SEQ-CCV5	
56	4	SEQ-CCB5	
57	141	18J1457-09	
58	142	18J1465-05	
59	143	18J1465-06	
60	144	18J1465-07	
61	145	18J1465-10	
62	146	SEQ-SRD2	18J1438-04
63	147	18J1381-11	BJ81667
64	148	18J1381-12	BJ81667
65	149	BJ81667-DUP1	
66	150	BJ81667-MS1	
67	9	SEQ-CCV6	
68	4	SEQ-CCB6	
69	151	SEQ-SRD3	18J1381-12
70	152	BJ81670-BLK1	
71	153	BJ81670-SRM1	
72	154	18J1316-01	
73	155	18J1316-02	
74	156	18J1316-03	
75	157	18J1338-01	
76	158	18J1338-02	
77	159	18J1338-03	
78	160	18J1338-04	
79	9	SEQ-CCV7	
80	4	SEQ-CCB7	
81	201	18J1338-05	
82	202	18J1350-01	
83	203	18J1359-01	
84	204	18J1359-02	
85	205	18J1359-03	
86	206	18J1359-04	
87	207	BJ81670-DUP1	
88	208	BJ81670-MS1	
89	209	SEQ-SRD4	18J1359-04
90	210	BJ81671-BLK1	
91	10	SEQ-CCV8	
92	1	SEQ-CCB8	
93	211	BJ81671-SRM1	
94	212	18J1374-01	
95	213	18J1374-02	
96	214	18J1374-03	
97	215	18J1374-04	
98	216	18J1374-05	
99	217	18J1374-06	
100	218	18J1374-07	
101	219	18J1374-08	
102	220	18J1374-09	
103	10	SEQ-CCV9	
104	1	SEQ-CCB9	
105	221	18J1374-10	
106	222	18J1374-11	
107	223	18J1374-12	
108	224	18J1374-13	
109	225	18J1374-14	
110	226	18J1374-15	
111	227	18J1374-16	
112	228	18J1390-24	
113	229	BJ81671-DUP1	
114	230	BJ81671-MS1	
115	10	SEQ-CCVA	

116	1	SEQ-CCBA	
117	231	SEQ-SRD5	18J1390-24
118	232	18J1162-30RE1	BJ81467 10X
119	233	BJ81698-BLK1	
120	234	BJ81698-BS1	
121	235	18J1227-01	
122	236	18J1263-01	
123	237	BJ81698-DUP1	
124	238	BJ81698-MS1	
125	239	18J1263-02	
126	240	18J1263-03	
127	10	SEQ-CCVB	
128	1	SEQ-CCBB	
129	241	18J1263-04	
130	242	18J1263-05	
131	243	18J1263-06	
132	244	18J1263-07	
133	245	18J1263-08	
134	246	18J1263-10	
135	247	SEQ-SRD6	18J1263-01
136	248	BJ81736-BLK1	
137	249	BJ81736-SRM1	
138	250	18J1400-01	
139	10	SEQ-CCVC	
140	1	SEQ-CCBC	
141	251	18J1444-01	
142	252	18J1445-01	
143	253	18J1445-02	
144	254	18J1446-01	
145	255	18J1453-01	
146	256	18J1462-01	
147	257	18J1462-02	
148	258	18J1462-03	
149	259	18J1462-04	
150	260	18J1462-05	
151	10	SEQ-CCVD	
152	1	SEQ-CCBD	
153	301	18J1462-06	
154	302	18J1462-07	
155	303	18J1462-08	
156	304	18J1462-09	
157	305	18J1469-01	
158	306	18J1469-02	
159	307	18J1469-03	
160	308	BJ81736-DUP1	
161	309	BJ81736-MS1	
162	310	18J1469-04	
163	10	SEQ-CCVE	
164	1	SEQ-CCBE	
165	311	SEQ-SRD7	
166	10	SEQ-CCVF	
167	1	SEQ-CCBF	
168	5	SEQ-CRL3	
169	6	SEQ-CRL4	
170	7	SEQ-IFA2	
171	8	SEQ-IFB2	
172	405	SEQ-HCV1	
173	1	BLANK1	
174	1	BLANK2	
175	9	SEQ-CCVG	
176	4	SEQ-CCBG	

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 10/31/2018 11:23:14 AM
Data Type: Reprocessed on 11/1/2018 9:08:59 AM

Initial Sample Vol:
Sample Prep Vol:

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	16531384.7	42248.61	0.26%	5.000	mg/L
Y RADIAL	259302.9	3590.31	1.38%	5.000	mg/L
As 188.979†	-21.8	7.78	35.74%	[0.00]	mg/L
Tl 190.801†	-92.0	1.07	1.17%	[0.00]	mg/L
Se 196.026†	49.1	12.29	25.03%	[0.00]	mg/L
Zn 206.200†	62.7	0.36	0.57%	[0.00]	mg/L
Sb 206.836†	87.5	10.33	11.80%	[0.00]	mg/L
Pb 220.353†	164.7	9.22	5.60%	[0.00]	mg/L
Cd 226.502†	-526.7	16.57	3.15%	[0.00]	mg/L
Co 228.616†	-211.4	9.10	4.31%	[0.00]	mg/L
Ni 232.003†	-1309.7	45.66	3.49%	[0.00]	mg/L
Ba 233.527†	-43.7	11.25	25.77%	[0.00]	mg/L
Mn 257.610†	398.3	4.15	1.04%	[0.00]	mg/L
Cr 267.716†	683.5	4.04	0.59%	[0.00]	mg/L
Fe 273.955†	63.3	7.56	11.93%	[0.00]	mg/L
Mg 279.077†	-54.6	68.15	124.85%	[0.00]	mg/L
V 292.402†	-314.3	69.69	22.17%	[0.00]	mg/L
Al 308.215†	5385.3	39.26	0.73%	[0.00]	mg/L
Be 313.107†	-8363.0	110.22	1.32%	[0.00]	mg/L
Cu 324.752†	985.6	65.98	6.69%	[0.00]	mg/L
Ag 338.289†	338.5	143.09	42.28%	[0.00]	mg/L
Na 330.237†	268.0	66.93	24.97%	[0.00]	mg/L
Ca 227.546†	-612.1	26.34	4.30%	[0.00]	mg/L
Al RADIAL†	39.9	42.30	106.04%	[0.00]	mg/L
Fe RADIAL†	5.2	0.57	10.95%	[0.00]	mg/L
Ca RADIAL†	1289.4	46.43	3.60%	[0.00]	mg/L
K RADIAL†	421.2	37.62	8.93%	[0.00]	mg/L
Mg RADIAL†	17.0	3.69	21.76%	[0.00]	mg/L
Na RADIAL†	762.1	74.95	9.83%	[0.00]	mg/L

Sequence No.: 2
Sample ID: CAL STD 1
Analyst:
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 2
Date Collected: 10/31/2018 11:25:44 AM
Data Type: Reprocessed on 11/1/2018 9:09:00 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: CAL STD 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	15598736.3	70746.12	0.45%	4.718	mg/L
Y RADIAL	250787.0	1319.47	0.53%	4.836	mg/L
As 188.979†	1549.6	9.07	0.59%	[1.0000]	mg/L
Tl 190.801†	1838.6	6.20	0.34%	[1.0000]	mg/L
Se 196.026†	1901.6	14.18	0.75%	[1.0000]	mg/L
Zn 206.200†	194995.1	598.27	0.31%	[5.0000]	mg/L
Sb 206.836†	1164.2	15.78	1.36%	[0.5000]	mg/L
Pb 220.353†	11991.7	15.04	0.13%	[1.0000]	mg/L
Cd 226.502†	72370.2	151.86	0.21%	[0.5000]	mg/L
Co 228.616†	195348.0	192.29	0.10%	[5.0000]	mg/L
Ni 232.003†	92422.0	102.35	0.11%	[5.0000]	mg/L
Ba 233.527†	1773795.4	761.42	0.04%	[20.0000]	mg/L
Mn 257.610†	3276274.2	2360.10	0.07%	[5.0000]	mg/L
Cr 267.716†	282816.5	450.74	0.16%	[2.0000]	mg/L
Fe 273.955†	222763.1	147.92	0.07%	[10.0000]	mg/L
Mg 279.077†	1058079.5	774.88	0.07%	[50.0000]	mg/L
V 292.402†	1067996.0	2404.73	0.23%	[5.0000]	mg/L
Al 308.215†	371290.7	278.26	0.07%	[20.0000]	mg/L
Be 313.107†	1857960.3	7344.69	0.40%	[0.5000]	mg/L
Cu 324.752†	571112.3	725.10	0.13%	[2.5000]	mg/L
Ag 338.289†	247315.9	658.07	0.27%	[2.5000]	mg/L
Na 330.237†	31506.8	67.42	0.21%	[50.0000]	mg/L
Ca 227.546†	12409.0	16.34	0.13%	[50.0000]	mg/L
Al RADIAL†	22349.6	86.82	0.39%	[20.0000]	mg/L
Fe RADIAL†	3884.8	21.18	0.55%	[10.0000]	mg/L
Ca RADIAL†	196708.2	65.52	0.03%	[50.0000]	mg/L
K RADIAL†	10957.6	83.18	0.76%	[10.0000]	mg/L
Mg RADIAL†	22888.1	98.98	0.43%	[50.0000]	mg/L
Na RADIAL†	147143.6	604.60	0.41%	[50.0000]	mg/L

Sequence No.: 3
Sample ID: SEQ-ICV1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 10/31/2018 11:28:17 AM
Data Type: Reprocessed on 11/1/2018 9:09:00 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-ICV1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	15854754.1	4.795	mg/L	0.0467				0.97%
Y RADIAL	256895.6	4.954	mg/L	0.0074				0.15%
As 188.979†	403.4	0.2604	mg/L	0.00502	0.2604	mg/L	0.00502	1.93%
Tl 190.801†	477.7	0.2599	mg/L	0.00398	0.2599	mg/L	0.00398	1.53%
Se 196.026†	524.9	0.2729	mg/L	0.01243	0.2729	mg/L	0.01243	4.55%
Zn 206.200†	101347.3	2.599	mg/L	0.0118	2.599	mg/L	0.0118	0.46%
Sb 206.836†	630.2	0.2711	mg/L	0.00449	0.2711	mg/L	0.00449	1.65%
Pb 220.353†	3081.9	0.2583	mg/L	0.00292	0.2583	mg/L	0.00292	1.13%
Cd 226.502†	18505.1	0.1275	mg/L	0.00035	0.1275	mg/L	0.00035	0.28%
Co 228.616†	101228.4	2.591	mg/L	0.0154	2.591	mg/L	0.0154	0.59%
Ni 232.003†	47640.0	2.577	mg/L	0.0149	2.577	mg/L	0.0149	0.58%
Ba 233.527†	908435.5	10.24	mg/L	0.099	10.24	mg/L	0.099	0.96%
Mn 257.610†	1664974.1	2.541	mg/L	0.0223	2.541	mg/L	0.0223	0.88%
Cr 267.716†	149738.9	1.059	mg/L	0.0062	1.059	mg/L	0.0062	0.58%
Fe 273.955†	116416.1	5.226	mg/L	0.0340	5.226	mg/L	0.0340	0.65%
Mg 279.077†	529624.9	25.03	mg/L	0.228	25.03	mg/L	0.228	0.91%
V 292.402†	540025.6	2.528	mg/L	0.0187	2.528	mg/L	0.0187	0.74%
Al 308.215†	190494.7	10.26	mg/L	0.062	10.26	mg/L	0.062	0.60%
Be 313.107†	958770.1	0.25802	mg/L	0.001572	0.25802	mg/L	0.001572	0.61%
Cu 324.752†	299001.9	1.309	mg/L	0.0087	1.309	mg/L	0.0087	0.67%
Ag 338.289†	128465.7	1.298	mg/L	0.0091	1.298	mg/L	0.0091	0.70%
Na 330.237†	15185.4	24.15	mg/L	0.278	24.15	mg/L	0.278	1.15%
Ca 227.546†	6157.9	24.86	mg/L	0.290	24.86	mg/L	0.290	1.17%
Al RADIAL†	11712.6	10.48	mg/L	0.059	10.48	mg/L	0.059	0.56%
Fe RADIAL†	1978.8	5.094	mg/L	0.0232	5.094	mg/L	0.0232	0.46%
Ca RADIAL†	99003.9	25.17	mg/L	0.076	25.17	mg/L	0.076	0.30%
K RADIAL†	5568.0	5.081	mg/L	0.0629	5.081	mg/L	0.0629	1.24%
Mg RADIAL†	11490.4	25.10	mg/L	0.054	25.10	mg/L	0.054	0.22%
Na RADIAL†	74897.5	25.45	mg/L	0.051	25.45	mg/L	0.051	0.20%

Sequence No.: 4
Sample ID: SEQ-ICB1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 10/31/2018 11:30:54 AM
Data Type: Reprocessed on 11/1/2018 9:09:01 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-ICB1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	16529256.7	4.999	mg/L	0.0291				0.58%
Y RADIAL	260328.6	5.020	mg/L	0.0220				0.44%
As 188.979†	0.8	0.0005	mg/L	0.00654	0.0005	mg/L	0.00654	>999.9%
Tl 190.801†	16.2	0.0088	mg/L	0.00378	0.0088	mg/L	0.00378	42.82%
Se 196.026†	-10.9	-0.0057	mg/L	0.00278	-0.0057	mg/L	0.00278	48.43%
Zn 206.200†	371.8	0.0095	mg/L	0.00020	0.0095	mg/L	0.00020	2.11%
Sb 206.836†	-1.4	-0.0006	mg/L	0.00544	-0.0006	mg/L	0.00544	926.76%
Pb 220.353†	-14.3	-0.0012	mg/L	0.00078	-0.0012	mg/L	0.00078	65.64%
Cd 226.502†	-16.6	-0.0001	mg/L	0.00008	-0.0001	mg/L	0.00008	67.57%
Co 228.616†	-1.6	0.0000	mg/L	0.00037	0.0000	mg/L	0.00037	932.51%
Ni 232.003†	12.2	0.0007	mg/L	0.00074	0.0007	mg/L	0.00074	112.23%
Ba 233.527†	11.0	0.0001	mg/L	0.00009	0.0001	mg/L	0.00009	69.43%
Mn 257.610†	64.4	0.0001	mg/L	0.00005	0.0001	mg/L	0.00005	47.58%
Cr 267.716†	14.2	0.0001	mg/L	0.00028	0.0001	mg/L	0.00028	279.61%
Fe 273.955†	-25.4	-0.0011	mg/L	0.00054	-0.0011	mg/L	0.00054	47.35%
Mg 279.077†	47.2	0.0022	mg/L	0.00325	0.0022	mg/L	0.00325	145.61%
V 292.402†	-46.3	-0.0002	mg/L	0.00010	-0.0002	mg/L	0.00010	47.65%
Al 308.215†	-79.1	-0.0043	mg/L	0.00137	-0.0043	mg/L	0.00137	32.06%
Be 313.107†	325.2	0.00009	mg/L	0.000019	0.00009	mg/L	0.000019	21.34%
Cu 324.752†	-121.8	-0.0005	mg/L	0.00056	-0.0005	mg/L	0.00056	104.94%
Ag 338.289†	110.5	0.0011	mg/L	0.00160	0.0011	mg/L	0.00160	143.35%
Na 330.237†	-81.2	-0.1287	mg/L	0.09698	-0.1287	mg/L	0.09698	75.35%
Ca 227.546†	50.4	0.2032	mg/L	0.07419	0.2032	mg/L	0.07419	36.51%
Al RADIAL†	-25.1	-0.0225	mg/L	0.02343	-0.0225	mg/L	0.02343	104.14%
Fe RADIAL†	-2.7	-0.0068	mg/L	0.00623	-0.0068	mg/L	0.00623	91.31%
Ca RADIAL†	911.7	0.2317	mg/L	0.00323	0.2317	mg/L	0.00323	1.39%
K RADIAL†	-18.1	-0.0165	mg/L	0.04321	-0.0165	mg/L	0.04321	261.94%
Mg RADIAL†	4.0	0.0087	mg/L	0.01608	0.0087	mg/L	0.01608	184.69%
Na RADIAL†	-53.8	-0.0183	mg/L	0.02671	-0.0183	mg/L	0.02671	146.09%

Sequence No.: 5
Sample ID: SEQ-CRL1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 10/31/2018 11:33:24 AM
Data Type: Reprocessed on 11/1/2018 9:09:01 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CRL1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	16254075.1	4.916	mg/L	0.0310				0.63%
Y RADIAL	261272.8	5.038	mg/L	0.0332				0.66%
As 188.979†	24.5	0.0158	mg/L	0.00294	0.0158	mg/L	0.00294	18.58%
Tl 190.801†	56.6	0.0308	mg/L	0.00113	0.0308	mg/L	0.00113	3.66%
Se 196.026†	36.1	0.0187	mg/L	0.00349	0.0187	mg/L	0.00349	18.68%
Zn 206.200†	1086.3	0.0279	mg/L	0.00024	0.0279	mg/L	0.00024	0.87%
Sb 206.836†	60.6	0.0261	mg/L	0.00447	0.0261	mg/L	0.00447	17.13%
Pb 220.353†	59.6	0.0050	mg/L	0.00111	0.0050	mg/L	0.00111	22.26%
Cd 226.502†	454.6	0.0031	mg/L	0.00007	0.0031	mg/L	0.00007	2.28%
Co 228.616†	156.6	0.0040	mg/L	0.00026	0.0040	mg/L	0.00026	6.43%
Ni 232.003†	174.6	0.0094	mg/L	0.00115	0.0094	mg/L	0.00115	12.19%
Ba 233.527†	2371.3	0.0267	mg/L	0.00025	0.0267	mg/L	0.00025	0.93%
Mn 257.610†	6729.1	0.0103	mg/L	0.00009	0.0103	mg/L	0.00009	0.89%
Cr 267.716†	692.4	0.0049	mg/L	0.00038	0.0049	mg/L	0.00038	7.82%
Fe 273.955†	11734.9	0.5268	mg/L	0.00589	0.5268	mg/L	0.00589	1.12%
Mg 279.077†	10867.0	0.5134	mg/L	0.00784	0.5134	mg/L	0.00784	1.53%
V 292.402†	2134.2	0.0100	mg/L	0.00062	0.0100	mg/L	0.00062	6.19%
Al 308.215†	8953.6	0.4823	mg/L	0.00621	0.4823	mg/L	0.00621	1.29%
Be 313.107†	2050.0	0.00055	mg/L	0.000053	0.00055	mg/L	0.000053	9.54%
Cu 324.752†	9565.5	0.0419	mg/L	0.00053	0.0419	mg/L	0.00053	1.28%
Ag 338.289†	1018.8	0.0103	mg/L	0.00087	0.0103	mg/L	0.00087	8.43%
Na 330.237†	186.8	0.2994	mg/L	0.06964	0.2994	mg/L	0.06964	23.26%
Ca 227.546†	115.9	0.4720	mg/L	0.10065	0.4720	mg/L	0.10065	21.33%
Al RADIAL†	567.3	0.5077	mg/L	0.04076	0.5077	mg/L	0.04076	8.03%
Fe RADIAL†	204.2	0.5257	mg/L	0.01089	0.5257	mg/L	0.01089	2.07%
Ca RADIAL†	2154.2	0.5476	mg/L	0.01302	0.5476	mg/L	0.01302	2.38%
K RADIAL†	564.0	0.5147	mg/L	0.03203	0.5147	mg/L	0.03203	6.22%
Mg RADIAL†	224.0	0.4894	mg/L	0.00251	0.4894	mg/L	0.00251	0.51%
Na RADIAL†	1580.5	0.5371	mg/L	0.04108	0.5371	mg/L	0.04108	7.65%

Sequence No.: 7
Sample ID: SEQ-IFA1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 7
Date Collected: 10/31/2018 11:38:24 AM
Data Type: Reprocessed on 11/1/2018 9:09:02 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-IFA1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	13826854.3	4.182	mg/L	0.0340				0.81%
Y RADIAL	237841.7	4.586	mg/L	0.0668				1.46%
As 188.979†	-4.7	-0.0001	mg/L	0.00665	-0.0001	mg/L	0.00665	>999.9%
Tl 190.801†	-6.7	-0.0007	mg/L	0.00824	-0.0007	mg/L	0.00824	>999.9%
Se 196.026†	225.5	-0.0009	mg/L	0.00525	-0.0009	mg/L	0.00525	560.59%
Zn 206.200†	6.3	-0.0008	mg/L	0.00020	-0.0008	mg/L	0.00020	24.91%
Sb 206.836†	-36.6	0.0007	mg/L	0.00931	0.0007	mg/L	0.00931	>999.9%
Pb 220.353†	-696.3	0.0005	mg/L	0.00231	0.0005	mg/L	0.00231	420.64%
Cd 226.502†	1990.2	-0.0009	mg/L	0.00021	-0.0009	mg/L	0.00021	22.71%
Co 228.616†	-203.0	0.0007	mg/L	0.00017	0.0007	mg/L	0.00017	24.50%
Ni 232.003†	177.4	-0.0002	mg/L	0.00344	-0.0002	mg/L	0.00344	>999.9%
Ba 233.527†	135.1	0.0015	mg/L	0.00043	0.0015	mg/L	0.00043	28.00%
Mn 257.610†	-10838.3	0.0001	mg/L	0.00031	0.0001	mg/L	0.00031	271.74%
Cr 267.716†	-187.8	0.0006	mg/L	0.00012	0.0006	mg/L	0.00012	19.64%
Fe 273.955†	4398284.3	197.4	mg/L	2.26	197.4	mg/L	2.26	1.14%
Mg 279.077†	10904926.5	515.3	mg/L	1.27	515.3	mg/L	1.27	0.25%
V 292.402†	3279.0	0.0007	mg/L	0.00064	0.0007	mg/L	0.00064	98.12%
Al 308.215†	10193754.3	549.1	mg/L	0.10	549.1	mg/L	0.10	0.02%
Be 313.107†	-770.1	-0.00021	mg/L	0.000049	-0.00021	mg/L	0.000049	23.76%
Cu 324.752†	-605.3	-0.0007	mg/L	0.00034	-0.0007	mg/L	0.00034	48.91%
Ag 338.289†	94.3	0.0002	mg/L	0.00033	0.0002	mg/L	0.00033	132.88%
Na 330.237†	-1361.0	-0.7637	mg/L	0.06911	-0.7637	mg/L	0.06911	9.05%
Ca 227.546†	129312.2	523.1	mg/L	5.57	523.1	mg/L	5.57	1.06%
Al RADIAL†	596528.3	533.8	mg/L	10.54	533.8	mg/L	10.54	1.98%
Fe RADIAL†	76114.1	195.9	mg/L	0.46	195.9	mg/L	0.46	0.24%
Ca RADIAL†	1954963.8	496.9	mg/L	9.87	496.9	mg/L	9.87	1.99%
K RADIAL†	35.5	0.0324	mg/L	0.05517	0.0324	mg/L	0.05517	170.13%
Mg RADIAL†	223251.6	487.7	mg/L	0.64	487.7	mg/L	0.64	0.13%
Na RADIAL†	172.7	0.0587	mg/L	0.04291	0.0587	mg/L	0.04291	73.14%

Sequence No.: 8
Sample ID: SEQ-IFB1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 8
Date Collected: 10/31/2018 11:40:32 AM
Data Type: Reprocessed on 11/1/2018 9:09:03 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-IFB1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	13888661.0	4.201	mg/L	0.0129				0.31%
Y RADIAL	238456.1	4.598	mg/L	0.0349				0.76%
As 188.979†	763.9	0.4959	mg/L	0.01904	0.4959	mg/L	0.01904	3.84%
Tl 190.801†	953.1	0.5213	mg/L	0.00666	0.5213	mg/L	0.00666	1.28%
Se 196.026†	1109.3	0.4647	mg/L	0.00800	0.4647	mg/L	0.00800	1.72%
Zn 206.200†	36802.7	0.9427	mg/L	0.00878	0.9427	mg/L	0.00878	0.93%
Sb 206.836†	1208.9	0.5355	mg/L	0.00757	0.5355	mg/L	0.00757	1.41%
Pb 220.353†	10803.5	0.9585	mg/L	0.00406	0.9585	mg/L	0.00406	0.42%
Cd 226.502†	142407.4	0.9693	mg/L	0.00948	0.9693	mg/L	0.00948	0.98%
Co 228.616†	18832.4	0.4879	mg/L	0.00106	0.4879	mg/L	0.00106	0.22%
Ni 232.003†	18917.4	1.014	mg/L	0.0077	1.014	mg/L	0.0077	0.76%
Ba 233.527†	45215.3	0.5098	mg/L	0.00434	0.5098	mg/L	0.00434	0.85%
Mn 257.610†	313764.7	0.4954	mg/L	0.00468	0.4954	mg/L	0.00468	0.95%
Cr 267.716†	70154.3	0.4981	mg/L	0.00494	0.4981	mg/L	0.00494	0.99%
Fe 273.955†	4345021.5	195.1	mg/L	1.82	195.1	mg/L	1.82	0.94%
Mg 279.077†	10764560.9	508.7	mg/L	1.48	508.7	mg/L	1.48	0.29%
V 292.402†	109975.1	0.5003	mg/L	0.00560	0.5003	mg/L	0.00560	1.12%
Al 308.215†	10075204.7	542.7	mg/L	1.46	542.7	mg/L	1.46	0.27%
Be 313.107†	1890735.1	0.50882	mg/L	0.004883	0.50882	mg/L	0.004883	0.96%
Cu 324.752†	124302.0	0.5461	mg/L	0.00506	0.5461	mg/L	0.00506	0.93%
Ag 338.289†	107943.8	1.091	mg/L	0.0113	1.091	mg/L	0.0113	1.03%
Na 330.237†	-749.4	0.1915	mg/L	0.04042	0.1915	mg/L	0.04042	21.11%
Ca 227.546†	127397.5	515.4	mg/L	4.47	515.4	mg/L	4.47	0.87%
Al RADIAL†	587579.0	525.8	mg/L	5.09	525.8	mg/L	5.09	0.97%
Fe RADIAL†	75569.9	194.5	mg/L	1.35	194.5	mg/L	1.35	0.69%
Ca RADIAL†	1918872.1	487.7	mg/L	3.74	487.7	mg/L	3.74	0.77%
K RADIAL†	167.0	0.1524	mg/L	0.01490	0.1524	mg/L	0.01490	9.78%
Mg RADIAL†	221457.0	483.8	mg/L	4.08	483.8	mg/L	4.08	0.84%
Na RADIAL†	277.6	0.0943	mg/L	0.01514	0.0943	mg/L	0.01514	16.05%

Sequence No.: 9
Sample ID: SEQ-CCV1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 9
Date Collected: 10/31/2018 11:42:41 AM
Data Type: Reprocessed on 11/1/2018 9:09:03 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCV1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15820140.0	4.785	mg/L	0.0236				0.49%
Y RADIAL	255072.1	4.918	mg/L	0.0517				1.05%
As 188.979†	763.8	0.4930	mg/L	0.00784	0.4930	mg/L	0.00784	1.59%
Tl 190.801†	997.5	0.5426	mg/L	0.00446	0.5426	mg/L	0.00446	0.82%
Se 196.026†	959.0	0.5013	mg/L	0.01154	0.5013	mg/L	0.01154	2.30%
Zn 206.200†	100610.7	2.580	mg/L	0.0288	2.580	mg/L	0.0288	1.12%
Sb 206.836†	598.1	0.2573	mg/L	0.00586	0.2573	mg/L	0.00586	2.28%
Pb 220.353†	6047.5	0.5056	mg/L	0.00337	0.5056	mg/L	0.00337	0.67%
Cd 226.502†	36699.7	0.2532	mg/L	0.00263	0.2532	mg/L	0.00263	1.04%
Co 228.616†	100318.8	2.568	mg/L	0.0230	2.568	mg/L	0.0230	0.90%
Ni 232.003†	47157.9	2.551	mg/L	0.0234	2.551	mg/L	0.0234	0.92%
Ba 233.527†	911710.4	10.28	mg/L	0.071	10.28	mg/L	0.071	0.69%
Mn 257.610†	1684157.5	2.571	mg/L	0.0189	2.571	mg/L	0.0189	0.74%
Cr 267.716†	147123.9	1.040	mg/L	0.0117	1.040	mg/L	0.0117	1.12%
Fe 273.955†	115329.9	5.177	mg/L	0.0557	5.177	mg/L	0.0557	1.08%
Mg 279.077†	535142.2	25.29	mg/L	0.184	25.29	mg/L	0.184	0.73%
V 292.402†	541520.0	2.535	mg/L	0.0167	2.535	mg/L	0.0167	0.66%
Al 308.215†	189745.0	10.22	mg/L	0.116	10.22	mg/L	0.116	1.14%
Be 313.107†	943696.5	0.25396	mg/L	0.001593	0.25396	mg/L	0.001593	0.63%
Cu 324.752†	293973.5	1.287	mg/L	0.0122	1.287	mg/L	0.0122	0.95%
Ag 338.289†	128335.9	1.297	mg/L	0.0129	1.297	mg/L	0.0129	1.00%
Na 330.237†	15172.3	24.13	mg/L	0.237	24.13	mg/L	0.237	0.98%
Ca 227.546†	6195.2	25.01	mg/L	0.228	25.01	mg/L	0.228	0.91%
Al RADIAL†	11752.3	10.52	mg/L	0.093	10.52	mg/L	0.093	0.88%
Fe RADIAL†	1956.9	5.037	mg/L	0.0650	5.037	mg/L	0.0650	1.29%
Ca RADIAL†	98993.0	25.16	mg/L	0.063	25.16	mg/L	0.063	0.25%
K RADIAL†	5504.5	5.023	mg/L	0.0473	5.023	mg/L	0.0473	0.94%
Mg RADIAL†	11431.9	24.97	mg/L	0.198	24.97	mg/L	0.198	0.79%
Na RADIAL†	76371.9	25.95	mg/L	0.129	25.95	mg/L	0.129	0.50%

Sequence No.: 10
Sample ID: SEQ-CCB1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 10/31/2018 11:45:18 AM
Data Type: Reprocessed on 11/1/2018 9:09:04 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCB1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	16524002.3	4.998	mg/L	0.0259				0.52%
Y RADIAL	262470.6	5.061	mg/L	0.0433				0.85%
As 188.979†	-3.2	-0.0021	mg/L	0.00535	-0.0021	mg/L	0.00535	260.76%
Tl 190.801†	-8.2	-0.0044	mg/L	0.00199	-0.0044	mg/L	0.00199	44.88%
Se 196.026†	-6.1	-0.0032	mg/L	0.00312	-0.0032	mg/L	0.00312	97.86%
Zn 206.200†	377.9	0.0097	mg/L	0.00025	0.0097	mg/L	0.00025	2.58%
Sb 206.836†	0.5	0.0002	mg/L	0.00394	0.0002	mg/L	0.00394	>999.9%
Pb 220.353†	-4.5	-0.0004	mg/L	0.00201	-0.0004	mg/L	0.00201	534.28%
Cd 226.502†	-13.1	-0.0001	mg/L	0.00010	-0.0001	mg/L	0.00010	110.47%
Co 228.616†	-10.9	-0.0003	mg/L	0.00037	-0.0003	mg/L	0.00037	133.31%
Ni 232.003†	-50.6	-0.0027	mg/L	0.00077	-0.0027	mg/L	0.00077	28.25%
Ba 233.527†	4.5	0.0001	mg/L	0.00011	0.0001	mg/L	0.00011	224.02%
Mn 257.610†	68.0	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	11.11%
Cr 267.716†	27.8	0.0002	mg/L	0.00001	0.0002	mg/L	0.00001	3.76%
Fe 273.955†	-47.9	-0.0022	mg/L	0.00035	-0.0022	mg/L	0.00035	16.14%
Mg 279.077†	49.4	0.0023	mg/L	0.00307	0.0023	mg/L	0.00307	131.51%
V 292.402†	-18.7	-0.0001	mg/L	0.00053	-0.0001	mg/L	0.00053	611.60%
Al 308.215†	103.2	0.0056	mg/L	0.00178	0.0056	mg/L	0.00178	32.00%
Be 313.107†	272.9	0.00007	mg/L	0.000008	0.00007	mg/L	0.000008	10.36%
Cu 324.752†	-40.1	-0.0002	mg/L	0.00023	-0.0002	mg/L	0.00023	129.00%
Ag 338.289†	5.3	0.0001	mg/L	0.00025	0.0001	mg/L	0.00025	500.37%
Na 330.237†	-58.6	-0.0928	mg/L	0.09416	-0.0928	mg/L	0.09416	101.50%
Ca 227.546†	40.6	0.1636	mg/L	0.04884	0.1636	mg/L	0.04884	29.84%
Al RADIAL†	-29.6	-0.0265	mg/L	0.02293	-0.0265	mg/L	0.02293	86.61%
Fe RADIAL†	-2.0	-0.0053	mg/L	0.01089	-0.0053	mg/L	0.01089	207.25%
Ca RADIAL†	879.7	0.2236	mg/L	0.00257	0.2236	mg/L	0.00257	1.15%
K RADIAL†	25.2	0.0230	mg/L	0.02496	0.0230	mg/L	0.02496	108.36%
Mg RADIAL†	6.2	0.0134	mg/L	0.01215	0.0134	mg/L	0.01215	90.36%
Na RADIAL†	77.0	0.0262	mg/L	0.01239	0.0262	mg/L	0.01239	47.35%

Sequence No.: 117
Sample ID: SEQ-CCVA
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 10
Date Collected: 10/31/2018 3:51:19 PM
Data Type: Reprocessed on 11/1/2018 9:09:57 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCVA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16286975.6	4.926	mg/L	0.0578				1.17%
Y RADIAL	265256.1	5.115	mg/L	0.0729				1.43%
As 188.979†	821.1	0.5300	mg/L	0.00882	0.5300	mg/L	0.00882	1.66%
Tl 190.801†	970.8	0.5281	mg/L	0.00445	0.5281	mg/L	0.00445	0.84%
Se 196.026†	1018.2	0.5323	mg/L	0.00407	0.5323	mg/L	0.00407	0.76%
Zn 206.200†	104431.5	2.678	mg/L	0.0336	2.678	mg/L	0.0336	1.25%
Sb 206.836†	602.6	0.2593	mg/L	0.00876	0.2593	mg/L	0.00876	3.38%
Pb 220.353†	6308.6	0.5273	mg/L	0.00518	0.5273	mg/L	0.00518	0.98%
Cd 226.502†	38121.2	0.2630	mg/L	0.00248	0.2630	mg/L	0.00248	0.94%
Co 228.616†	104436.4	2.673	mg/L	0.0368	2.673	mg/L	0.0368	1.38%
Ni 232.003†	48734.9	2.636	mg/L	0.0329	2.636	mg/L	0.0329	1.25%
Ba 233.527†	932255.4	10.51	mg/L	0.134	10.51	mg/L	0.134	1.28%
Mn 257.610†	1714600.5	2.617	mg/L	0.0392	2.617	mg/L	0.0392	1.50%
Cr 267.716†	151819.1	1.074	mg/L	0.0136	1.074	mg/L	0.0136	1.26%
Fe 273.955†	119593.4	5.369	mg/L	0.0702	5.369	mg/L	0.0702	1.31%
Mg 279.077†	554774.8	26.22	mg/L	0.342	26.22	mg/L	0.342	1.30%
V 292.402†	548313.0	2.567	mg/L	0.0309	2.567	mg/L	0.0309	1.21%
Al 308.215†	194262.0	10.46	mg/L	0.152	10.46	mg/L	0.152	1.46%
Be 313.107†	958234.6	0.25787	mg/L	0.002967	0.25787	mg/L	0.002967	1.15%
Cu 324.752†	299322.0	1.310	mg/L	0.0200	1.310	mg/L	0.0200	1.52%
Ag 338.289†	130981.7	1.324	mg/L	0.0178	1.324	mg/L	0.0178	1.34%
Na 330.237†	15444.2	24.56	mg/L	0.350	24.56	mg/L	0.350	1.43%
Ca 227.546†	6300.9	25.44	mg/L	0.192	25.44	mg/L	0.192	0.75%
Al RADIAL†	11823.1	10.58	mg/L	0.097	10.58	mg/L	0.097	0.91%
Fe RADIAL†	2031.4	5.229	mg/L	0.0506	5.229	mg/L	0.0506	0.97%
Ca RADIAL†	101932.5	25.91	mg/L	0.320	25.91	mg/L	0.320	1.24%
K RADIAL†	5758.0	5.255	mg/L	0.0806	5.255	mg/L	0.0806	1.53%
Mg RADIAL†	12006.9	26.23	mg/L	0.202	26.23	mg/L	0.202	0.77%
Na RADIAL†	79605.7	27.05	mg/L	0.298	27.05	mg/L	0.298	1.10%

Sequence No.: 118
Sample ID: SEQ-CCBA
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 10/31/2018 3:53:56 PM
Data Type: Reprocessed on 11/1/2018 9:09:58 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCBA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16906731.5	5.114	mg/L	0.0531				1.04%
Y RADIAL	270279.6	5.212	mg/L	0.0525				1.01%
As 188.979†	8.2	0.0053	mg/L	0.00374	0.0053	mg/L	0.00374	70.74%
Tl 190.801†	9.7	0.0053	mg/L	0.00212	0.0053	mg/L	0.00212	40.03%
Se 196.026†	-11.6	-0.0061	mg/L	0.00329	-0.0061	mg/L	0.00329	54.02%
Zn 206.200†	24.3	0.0006	mg/L	0.00031	0.0006	mg/L	0.00031	49.10%
Sb 206.836†	-11.0	-0.0047	mg/L	0.00223	-0.0047	mg/L	0.00223	47.26%
Pb 220.353†	-13.0	-0.0011	mg/L	0.00135	-0.0011	mg/L	0.00135	125.16%
Cd 226.502†	-8.7	-0.0001	mg/L	0.00023	-0.0001	mg/L	0.00023	375.06%
Co 228.616†	11.0	0.0003	mg/L	0.00021	0.0003	mg/L	0.00021	75.36%
Ni 232.003†	39.6	0.0021	mg/L	0.00035	0.0021	mg/L	0.00035	16.48%
Ba 233.527†	5.5	0.0001	mg/L	0.00020	0.0001	mg/L	0.00020	330.31%
Mn 257.610†	-5.1	0.0000	mg/L	0.00001	0.0000	mg/L	0.00001	155.34%
Cr 267.716†	35.8	0.0003	mg/L	0.00018	0.0003	mg/L	0.00018	72.27%
Fe 273.955†	-56.5	-0.0025	mg/L	0.00087	-0.0025	mg/L	0.00087	34.23%
Mg 279.077†	16.1	0.0008	mg/L	0.00241	0.0008	mg/L	0.00241	318.30%
V 292.402†	34.8	0.0002	mg/L	0.00012	0.0002	mg/L	0.00012	74.27%
Al 308.215†	81.1	0.0044	mg/L	0.00606	0.0044	mg/L	0.00606	138.64%
Be 313.107†	118.8	0.00003	mg/L	0.000023	0.00003	mg/L	0.000023	71.67%
Cu 324.752†	-103.1	-0.0005	mg/L	0.00029	-0.0005	mg/L	0.00029	64.31%
Ag 338.289†	7.0	0.0001	mg/L	0.00054	0.0001	mg/L	0.00054	763.09%
Na 330.237†	16.8	0.0267	mg/L	0.09521	0.0267	mg/L	0.09521	356.31%
Ca 227.546†	-13.8	-0.0553	mg/L	0.06596	-0.0553	mg/L	0.06596	119.23%
Al RADIAL†	-3.5	-0.0031	mg/L	0.02395	-0.0031	mg/L	0.02395	775.63%
Fe RADIAL†	5.6	0.0145	mg/L	0.00433	0.0145	mg/L	0.00433	29.81%
Ca RADIAL†	-10.4	-0.0026	mg/L	0.00578	-0.0026	mg/L	0.00578	218.78%
K RADIAL†	23.5	0.0214	mg/L	0.09297	0.0214	mg/L	0.09297	433.81%
Mg RADIAL†	5.2	0.0114	mg/L	0.04446	0.0114	mg/L	0.04446	389.07%
Na RADIAL†	79.5	0.0270	mg/L	0.00409	0.0270	mg/L	0.00409	15.12%

Sequence No.: 121
Sample ID: BJ81698-BLK1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 233
Date Collected: 10/31/2018 4:01:03 PM
Data Type: Reprocessed on 11/1/2018 9:09:59 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: BJ81698-BLK1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16650775.1	5.036	mg/L	0.0418				0.83%
Y RADIAL	265674.9	5.123	mg/L	0.0110				0.21%
As 188.979†	10.1	0.0065	mg/L	0.00259	0.0065	mg/L	0.00259	39.56%
Tl 190.801†	19.8	0.0107	mg/L	0.00456	0.0107	mg/L	0.00456	42.43%
Se 196.026†	4.6	0.0024	mg/L	0.00383	0.0024	mg/L	0.00383	159.64%
Zn 206.200†	-51.0	-0.0013	mg/L	0.00037	-0.0013	mg/L	0.00037	28.05%
Sb 206.836†	1.6	0.0007	mg/L	0.00234	0.0007	mg/L	0.00234	330.62%
Pb 220.353†	6.7	0.0006	mg/L	0.00144	0.0006	mg/L	0.00144	259.52%
Cd 226.502†	-4.8	0.0000	mg/L	0.00009	0.0000	mg/L	0.00009	266.12%
Co 228.616†	-4.0	-0.0001	mg/L	0.00033	-0.0001	mg/L	0.00033	319.46%
Ni 232.003†	36.6	0.0020	mg/L	0.00406	0.0020	mg/L	0.00406	205.11%
Ba 233.527†	11.4	0.0001	mg/L	0.00022	0.0001	mg/L	0.00022	168.40%
Mn 257.610†	14.5	0.0000	mg/L	0.00010	0.0000	mg/L	0.00010	444.83%
Cr 267.716†	39.3	0.0003	mg/L	0.00049	0.0003	mg/L	0.00049	176.10%
Fe 273.955†	-25.9	-0.0012	mg/L	0.00080	-0.0012	mg/L	0.00080	68.95%
Mg 279.077†	14.2	0.0007	mg/L	0.00127	0.0007	mg/L	0.00127	188.01%
V 292.402†	34.9	0.0002	mg/L	0.00017	0.0002	mg/L	0.00017	104.82%
Al 308.215†	-278.4	-0.0150	mg/L	0.00365	-0.0150	mg/L	0.00365	24.31%
Be 313.107†	63.3	0.00002	mg/L	0.000030	0.00002	mg/L	0.000030	175.21%
Cu 324.752†	11.1	0.0000	mg/L	0.00040	0.0000	mg/L	0.00040	826.93%
Ag 338.289†	7.2	0.0001	mg/L	0.00043	0.0001	mg/L	0.00043	592.24%
Na 330.237†	-21.8	-0.0346	mg/L	0.13173	-0.0346	mg/L	0.13173	380.85%
Ca 227.546†	-26.0	-0.1047	mg/L	0.11148	-0.1047	mg/L	0.11148	106.48%
Al RADIAL†	-35.0	-0.0313	mg/L	0.04243	-0.0313	mg/L	0.04243	135.52%
Fe RADIAL†	-1.5	-0.0040	mg/L	0.00200	-0.0040	mg/L	0.00200	50.24%
Ca RADIAL†	0.4	0.0001	mg/L	0.00497	0.0001	mg/L	0.00497	>999.9%
K RADIAL†	33.0	0.0301	mg/L	0.03221	0.0301	mg/L	0.03221	106.85%
Mg RADIAL†	11.1	0.0242	mg/L	0.00947	0.0242	mg/L	0.00947	39.15%
Na RADIAL†	105.0	0.0357	mg/L	0.03896	0.0357	mg/L	0.03896	109.16%

Sequence No.: 122
Sample ID: BJ81698-BS1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 234
Date Collected: 10/31/2018 4:03:32 PM
Data Type: Reprocessed on 11/1/2018 9:10:00 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: BJ81698-BS1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16728809.5	5.060	mg/L	0.0249				0.49%
Y RADIAL	268470.9	5.177	mg/L	0.0353				0.68%
As 188.979†	2974.5	1.920	mg/L	0.0139	1.920	mg/L	0.0139	0.73%
Tl 190.801†	3794.9	2.064	mg/L	0.0156	2.064	mg/L	0.0156	0.75%
Se 196.026†	3392.6	1.783	mg/L	0.0192	1.783	mg/L	0.0192	1.08%
Zn 206.200†	20046.0	0.5140	mg/L	0.00417	0.5140	mg/L	0.00417	0.81%
Sb 206.836†	610.7	0.2624	mg/L	0.00383	0.2624	mg/L	0.00383	1.46%
Pb 220.353†	6195.0	0.5168	mg/L	0.00310	0.5168	mg/L	0.00310	0.60%
Cd 226.502†	7384.4	0.0509	mg/L	0.00029	0.0509	mg/L	0.00029	0.56%
Co 228.616†	21407.3	0.5480	mg/L	0.00359	0.5480	mg/L	0.00359	0.65%
Ni 232.003†	9965.3	0.5391	mg/L	0.00452	0.5391	mg/L	0.00452	0.84%
Ba 233.527†	186290.7	2.100	mg/L	0.0203	2.100	mg/L	0.0203	0.97%
Mn 257.610†	344557.1	0.5259	mg/L	0.00527	0.5259	mg/L	0.00527	1.00%
Cr 267.716†	29250.1	0.2069	mg/L	0.00252	0.2069	mg/L	0.00252	1.22%
Fe 273.955†	24209.5	1.087	mg/L	0.0080	1.087	mg/L	0.0080	0.74%
Mg 279.077†	21932.9	1.036	mg/L	0.0171	1.036	mg/L	0.0171	1.65%
V 292.402†	107251.0	0.5020	mg/L	0.00468	0.5020	mg/L	0.00468	0.93%
Al 308.215†	34888.6	1.879	mg/L	0.0240	1.879	mg/L	0.0240	1.28%
Be 313.107†	184895.7	0.04976	mg/L	0.000591	0.04976	mg/L	0.000591	1.19%
Cu 324.752†	60948.1	0.2668	mg/L	0.00231	0.2668	mg/L	0.00231	0.87%
Ag 338.289†	5091.2	0.0515	mg/L	0.00055	0.0515	mg/L	0.00055	1.06%
Na 330.237†	725.4	1.157	mg/L	0.0479	1.157	mg/L	0.0479	4.14%
Ca 227.546†	234.3	0.9547	mg/L	0.05947	0.9547	mg/L	0.05947	6.23%
Al RADIAL†	2352.6	2.105	mg/L	0.0209	2.105	mg/L	0.0209	0.99%
Fe RADIAL†	410.0	1.055	mg/L	0.0061	1.055	mg/L	0.0061	0.57%
Ca RADIAL†	4170.5	1.060	mg/L	0.0128	1.060	mg/L	0.0128	1.21%
K RADIAL†	1197.5	1.093	mg/L	0.0041	1.093	mg/L	0.0041	0.38%
Mg RADIAL†	481.1	1.051	mg/L	0.0155	1.051	mg/L	0.0155	1.47%
Na RADIAL†	3224.4	1.096	mg/L	0.0271	1.096	mg/L	0.0271	2.48%

Sequence No.: 124
Sample ID: 18J1263-01
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 236
Date Collected: 10/31/2018 4:08:07 PM
Data Type: Reprocessed on 11/1/2018 9:10:01 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15745798.5	4.762	mg/L	0.0467				0.98%
Y RADIAL	256922.6	4.954	mg/L	0.0078				0.16%
As 188.979†	7.4	0.0049	mg/L	0.01330	0.0049	mg/L	0.01330	272.02%
Tl 190.801†	25.6	0.0140	mg/L	0.00513	0.0140	mg/L	0.00513	36.64%
Se 196.026†	172.2	0.0870	mg/L	0.00165	0.0870	mg/L	0.00165	1.90%
Zn 206.200†	681.6	0.0174	mg/L	0.00049	0.0174	mg/L	0.00049	2.78%
Sb 206.836†	-14.6	-0.0058	mg/L	0.00200	-0.0058	mg/L	0.00200	34.68%
Pb 220.353†	-21.4	-0.0011	mg/L	0.00062	-0.0011	mg/L	0.00062	56.83%
Cd 226.502†	58.1	0.0000	mg/L	0.00030	0.0000	mg/L	0.00030	725.04%
Co 228.616†	112.0	0.0030	mg/L	0.00046	0.0030	mg/L	0.00046	15.22%
Ni 232.003†	186.6	0.0098	mg/L	0.00033	0.0098	mg/L	0.00033	3.34%
Ba 233.527†	7951.8	0.0897	mg/L	0.00181	0.0897	mg/L	0.00181	2.02%
Mn 257.610†	5325002.8	8.127	mg/L	0.0971	8.127	mg/L	0.0971	1.19%
Cr 267.716†	556.6	0.0040	mg/L	0.00032	0.0040	mg/L	0.00032	7.92%
Fe 273.955†	130158.8	5.843	mg/L	0.1002	5.843	mg/L	0.1002	1.71%
Mg 279.077†	1123702.2	53.10	mg/L	0.916	53.10	mg/L	0.916	1.73%
V 292.402†	-47.2	-0.0007	mg/L	0.00026	-0.0007	mg/L	0.00026	39.61%
Al 308.215†	3004.5	0.1582	mg/L	0.00798	0.1582	mg/L	0.00798	5.04%
Be 313.107†	-528.7	-0.00014	mg/L	0.000041	-0.00014	mg/L	0.000041	28.47%
Cu 324.752†	1321.2	0.0058	mg/L	0.00035	0.0058	mg/L	0.00035	6.05%
Ag 338.289†	141.3	0.0006	mg/L	0.00032	0.0006	mg/L	0.00032	53.05%
Na 330.237†	21845.8	34.78	mg/L	0.467	34.78	mg/L	0.467	1.34%
Ca 227.546†	19857.4	80.07	mg/L	1.309	80.07	mg/L	1.309	1.64%
Al RADIAL†	138.0	0.1215	mg/L	0.01588	0.1215	mg/L	0.01588	13.07%
Fe RADIAL†	2296.7	5.912	mg/L	0.0215	5.912	mg/L	0.0215	0.36%
Ca RADIAL†	336199.8	85.46	mg/L	0.320	85.46	mg/L	0.320	0.37%
K RADIAL†	3279.8	2.993	mg/L	0.0216	2.993	mg/L	0.0216	0.72%
Mg RADIAL†	24318.3	53.12	mg/L	0.100	53.12	mg/L	0.100	0.19%
Na RADIAL†	118468.9	40.26	mg/L	0.207	40.26	mg/L	0.207	0.51%

Sequence No.: 125
Sample ID: BJ81698-DUP1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 237
Date Collected: 10/31/2018 4:10:37 PM
Data Type: Reprocessed on 11/1/2018 9:10:01 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: BJ81698-DUP1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	15916110.1	4.814	mg/L	0.0219				0.45%
Y RADIAL	258087.6	4.977	mg/L	0.0287				0.58%
As 188.979†	20.6	0.0133	mg/L	0.00650	0.0133	mg/L	0.00650	48.69%
Tl 190.801†	24.4	0.0133	mg/L	0.00227	0.0133	mg/L	0.00227	17.05%
Se 196.026†	166.8	0.0842	mg/L	0.00759	0.0842	mg/L	0.00759	9.01%
Zn 206.200†	467.5	0.0120	mg/L	0.00007	0.0120	mg/L	0.00007	0.59%
Sb 206.836†	-17.3	-0.0069	mg/L	0.00515	-0.0069	mg/L	0.00515	74.23%
Pb 220.353†	-12.1	-0.0003	mg/L	0.00068	-0.0003	mg/L	0.00068	198.27%
Cd 226.502†	80.6	0.0001	mg/L	0.00011	0.0001	mg/L	0.00011	94.15%
Co 228.616†	109.8	0.0030	mg/L	0.00046	0.0030	mg/L	0.00046	15.46%
Ni 232.003†	200.3	0.0105	mg/L	0.00066	0.0105	mg/L	0.00066	6.24%
Ba 233.527†	7793.5	0.0879	mg/L	0.00013	0.0879	mg/L	0.00013	0.14%
Mn 257.610†	5245919.3	8.006	mg/L	0.0214	8.006	mg/L	0.0214	0.27%
Cr 267.716†	611.5	0.0044	mg/L	0.00036	0.0044	mg/L	0.00036	8.29%
Fe 273.955†	127594.6	5.728	mg/L	0.0757	5.728	mg/L	0.0757	1.32%
Mg 279.077†	1102894.5	52.12	mg/L	0.681	52.12	mg/L	0.681	1.31%
V 292.402†	-12.1	-0.0005	mg/L	0.00022	-0.0005	mg/L	0.00022	44.32%
Al 308.215†	547.7	0.0259	mg/L	0.00570	0.0259	mg/L	0.00570	21.96%
Be 313.107†	-302.9	-0.00008	mg/L	0.000048	-0.00008	mg/L	0.000048	58.31%
Cu 324.752†	1270.3	0.0056	mg/L	0.00034	0.0056	mg/L	0.00034	5.99%
Ag 338.289†	103.2	0.0002	mg/L	0.00026	0.0002	mg/L	0.00026	107.11%
Na 330.237†	21331.4	33.96	mg/L	0.498	33.96	mg/L	0.498	1.47%
Ca 227.546†	19564.6	78.89	mg/L	1.241	78.89	mg/L	1.241	1.57%
Al RADIAL†	-10.8	-0.0115	mg/L	0.00071	-0.0115	mg/L	0.00071	6.19%
Fe RADIAL†	2256.9	5.810	mg/L	0.0596	5.810	mg/L	0.0596	1.03%
Ca RADIAL†	330766.6	84.08	mg/L	0.031	84.08	mg/L	0.031	0.04%
K RADIAL†	3322.0	3.032	mg/L	0.0558	3.032	mg/L	0.0558	1.84%
Mg RADIAL†	23975.7	52.38	mg/L	0.353	52.38	mg/L	0.353	0.67%
Na RADIAL†	116968.1	39.75	mg/L	0.418	39.75	mg/L	0.418	1.05%

Sequence No.: 126
Sample ID: BJ81698-MS1
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 238
Date Collected: 10/31/2018 4:13:08 PM
Data Type: Reprocessed on 11/1/2018 9:10:02 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: BJ81698-MS1

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15743609.2	4.762	mg/L	0.0314				0.66%
Y RADIAL	257022.5	4.956	mg/L	0.0350				0.71%
As 188.979†	3075.2	1.985	mg/L	0.0056	1.985	mg/L	0.0056	0.28%
Tl 190.801†	3796.5	2.065	mg/L	0.0110	2.065	mg/L	0.0110	0.53%
Se 196.026†	3657.8	1.919	mg/L	0.0124	1.919	mg/L	0.0124	0.64%
Zn 206.200†	19543.3	0.5011	mg/L	0.00274	0.5011	mg/L	0.00274	0.55%
Sb 206.836†	618.0	0.2660	mg/L	0.00122	0.2660	mg/L	0.00122	0.46%
Pb 220.353†	5802.7	0.4847	mg/L	0.00287	0.4847	mg/L	0.00287	0.59%
Cd 226.502†	7196.2	0.0492	mg/L	0.00028	0.0492	mg/L	0.00028	0.58%
Co 228.616†	19803.0	0.5071	mg/L	0.00232	0.5071	mg/L	0.00232	0.46%
Ni 232.003†	9502.1	0.5137	mg/L	0.00268	0.5137	mg/L	0.00268	0.52%
Ba 233.527†	184242.8	2.077	mg/L	0.0261	2.077	mg/L	0.0261	1.26%
Mn 257.610†	5477373.5	8.360	mg/L	0.0165	8.360	mg/L	0.0165	0.20%
Cr 267.716†	28662.1	0.2028	mg/L	0.00329	0.2028	mg/L	0.00329	1.62%
Fe 273.955†	147244.8	6.610	mg/L	0.0879	6.610	mg/L	0.0879	1.33%
Mg 279.077†	1100781.0	52.02	mg/L	0.753	52.02	mg/L	0.753	1.45%
V 292.402†	105370.6	0.4928	mg/L	0.00919	0.4928	mg/L	0.00919	1.86%
Al 308.215†	36812.4	1.979	mg/L	0.0296	1.979	mg/L	0.0296	1.50%
Be 313.107†	180719.4	0.04863	mg/L	0.000855	0.04863	mg/L	0.000855	1.76%
Cu 324.752†	58206.9	0.2549	mg/L	0.00313	0.2549	mg/L	0.00313	1.23%
Ag 338.289†	5096.1	0.0507	mg/L	0.00041	0.0507	mg/L	0.00041	0.81%
Na 330.237†	21743.8	34.62	mg/L	0.635	34.62	mg/L	0.635	1.83%
Ca 227.546†	20128.1	81.17	mg/L	0.395	81.17	mg/L	0.395	0.49%
Al RADIAL†	2299.7	2.056	mg/L	0.0404	2.056	mg/L	0.0404	1.96%
Fe RADIAL†	2600.4	6.694	mg/L	0.0749	6.694	mg/L	0.0749	1.12%
Ca RADIAL†	328063.7	83.39	mg/L	0.074	83.39	mg/L	0.074	0.09%
K RADIAL†	4268.6	3.896	mg/L	0.0729	3.896	mg/L	0.0729	1.87%
Mg RADIAL†	24002.9	52.43	mg/L	0.628	52.43	mg/L	0.628	1.20%
Na RADIAL†	118599.7	40.30	mg/L	0.314	40.30	mg/L	0.314	0.78%

Sequence No.: 127
Sample ID: 18J1263-02
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 239
Date Collected: 10/31/2018 4:15:40 PM
Data Type: Reprocessed on 11/1/2018 9:10:02 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16021929.4	4.846	mg/L	0.0389				0.80%
Y RADIAL	255710.1	4.931	mg/L	0.0186				0.38%
As 188.979†	1.5	0.0010	mg/L	0.00383	0.0010	mg/L	0.00383	383.10%
Tl 190.801†	-0.8	-0.0004	mg/L	0.00353	-0.0004	mg/L	0.00353	943.52%
Se 196.026†	48.1	0.0234	mg/L	0.00915	0.0234	mg/L	0.00915	39.07%
Zn 206.200†	1108.7	0.0284	mg/L	0.00042	0.0284	mg/L	0.00042	1.47%
Sb 206.836†	-8.9	-0.0036	mg/L	0.00479	-0.0036	mg/L	0.00479	134.78%
Pb 220.353†	27.8	0.0029	mg/L	0.00149	0.0029	mg/L	0.00149	52.36%
Cd 226.502†	50.3	0.0001	mg/L	0.00015	0.0001	mg/L	0.00015	128.16%
Co 228.616†	130.2	0.0034	mg/L	0.00030	0.0034	mg/L	0.00030	8.82%
Ni 232.003†	46.8	0.0024	mg/L	0.00135	0.0024	mg/L	0.00135	56.83%
Ba 233.527†	11282.3	0.1272	mg/L	0.00096	0.1272	mg/L	0.00096	0.76%
Mn 257.610†	283704.7	0.4332	mg/L	0.00236	0.4332	mg/L	0.00236	0.54%
Cr 267.716†	2724.9	0.0193	mg/L	0.00038	0.0193	mg/L	0.00038	1.98%
Fe 273.955†	66187.9	2.971	mg/L	0.0173	2.971	mg/L	0.0173	0.58%
Mg 279.077†	369077.6	17.44	mg/L	0.104	17.44	mg/L	0.104	0.60%
V 292.402†	1539.7	0.0070	mg/L	0.00049	0.0070	mg/L	0.00049	7.02%
Al 308.215†	33606.7	1.809	mg/L	0.0113	1.809	mg/L	0.0113	0.62%
Be 313.107†	458.1	0.00012	mg/L	0.000022	0.00012	mg/L	0.000022	18.22%
Cu 324.752†	3008.6	0.0132	mg/L	0.00051	0.0132	mg/L	0.00051	3.86%
Ag 338.289†	52.2	0.0002	mg/L	0.00092	0.0002	mg/L	0.00092	566.64%
Na 330.237†	31186.3	49.54	mg/L	0.276	49.54	mg/L	0.276	0.56%
Ca 227.546†	9296.9	37.49	mg/L	0.162	37.49	mg/L	0.162	0.43%
Al RADIAL†	2185.4	1.955	mg/L	0.0022	1.955	mg/L	0.0022	0.11%
Fe RADIAL†	1192.9	3.071	mg/L	0.0276	3.071	mg/L	0.0276	0.90%
Ca RADIAL†	153940.3	39.13	mg/L	0.113	39.13	mg/L	0.113	0.29%
K RADIAL†	3020.1	2.756	mg/L	0.0391	2.756	mg/L	0.0391	1.42%
Mg RADIAL†	8219.3	17.95	mg/L	0.126	17.95	mg/L	0.126	0.70%
Na RADIAL†	172751.5	58.70	mg/L	0.301	58.70	mg/L	0.301	0.51%

Sequence No.: 128
Sample ID: 18J1263-03
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 240
Date Collected: 10/31/2018 4:18:09 PM
Data Type: Reprocessed on 11/1/2018 9:10:03 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	13823232.2	4.181	mg/L	0.0162				0.39%
Y RADIAL	235402.3	4.539	mg/L	0.0698				1.54%
As 188.979†	-5.4	-0.0034	mg/L	0.00785	-0.0034	mg/L	0.00785	228.55%
Tl 190.801†	-6.5	-0.0035	mg/L	0.00524	-0.0035	mg/L	0.00524	150.29%
Se 196.026†	270.9	0.1409	mg/L	0.00933	0.1409	mg/L	0.00933	6.63%
Zn 206.200†	1462.8	0.0375	mg/L	0.00039	0.0375	mg/L	0.00039	1.04%
Sb 206.836†	4.2	0.0020	mg/L	0.00873	0.0020	mg/L	0.00873	428.16%
Pb 220.353†	-21.9	0.0035	mg/L	0.00070	0.0035	mg/L	0.00070	19.91%
Cd 226.502†	-18.0	-0.0003	mg/L	0.00007	-0.0003	mg/L	0.00007	22.18%
Co 228.616†	172.7	0.0045	mg/L	0.00030	0.0045	mg/L	0.00030	6.71%
Ni 232.003†	7599.0	0.4110	mg/L	0.00275	0.4110	mg/L	0.00275	0.67%
Ba 233.527†	30862.4	0.3480	mg/L	0.00072	0.3480	mg/L	0.00072	0.21%
Mn 257.610†	203891.9	0.3114	mg/L	0.00057	0.3114	mg/L	0.00057	0.18%
Cr 267.716†	7874.8	0.0557	mg/L	0.00039	0.0557	mg/L	0.00039	0.70%
Fe 273.955†	56349.0	2.530	mg/L	0.0079	2.530	mg/L	0.0079	0.31%
Mg 279.077†	2464057.9	116.4	mg/L	1.98	116.4	mg/L	1.98	1.70%
V 292.402†	544.5	0.0024	mg/L	0.00024	0.0024	mg/L	0.00024	10.35%
Al 308.215†	10301.7	0.5413	mg/L	0.00741	0.5413	mg/L	0.00741	1.37%
Be 313.107†	-1578.9	-0.00042	mg/L	0.000029	-0.00042	mg/L	0.000029	6.82%
Cu 324.752†	5177.1	0.0227	mg/L	0.00012	0.0227	mg/L	0.00012	0.53%
Ag 338.289†	467.6	0.0004	mg/L	0.00107	0.0004	mg/L	0.00107	280.91%
Na 330.237†	832216.8	1321	mg/L	16.5	1321	mg/L	16.5	1.25%
Ca 227.546†	100447.9	404.8	mg/L	0.39	404.8	mg/L	0.39	0.10%
Al RADIAL†	555.8	0.4860	mg/L	0.01301	0.4860	mg/L	0.01301	2.68%
Fe RADIAL†	1012.3	2.606	mg/L	0.0404	2.606	mg/L	0.0404	1.55%
Ca RADIAL†	1538695.9	391.1	mg/L	1.74	391.1	mg/L	1.74	0.45%
K RADIAL†	18433.4	16.82	mg/L	0.164	16.82	mg/L	0.164	0.98%
Mg RADIAL†	51847.7	113.3	mg/L	0.23	113.3	mg/L	0.23	0.21%
Na RADIAL†	2958150.4	1005	mg/L	16.8	1005	mg/L	16.8	1.67%

Sequence No.: 129
Sample ID: SEQ-CCVB
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 10
Date Collected: 10/31/2018 4:20:52 PM
Data Type: Reprocessed on 11/1/2018 9:10:03 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCVB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15943038.5	4.822	mg/L	0.0151				0.31%
Y RADIAL	260164.7	5.017	mg/L	0.0378				0.75%
As 188.979†	781.6	0.5045	mg/L	0.00572	0.5045	mg/L	0.00572	1.13%
Tl 190.801†	947.4	0.5153	mg/L	0.00209	0.5153	mg/L	0.00209	0.40%
Se 196.026†	977.4	0.5109	mg/L	0.00794	0.5109	mg/L	0.00794	1.55%
Zn 206.200†	100071.8	2.566	mg/L	0.0415	2.566	mg/L	0.0415	1.62%
Sb 206.836†	579.9	0.2495	mg/L	0.00181	0.2495	mg/L	0.00181	0.72%
Pb 220.353†	6082.7	0.5085	mg/L	0.00152	0.5085	mg/L	0.00152	0.30%
Cd 226.502†	36767.4	0.2536	mg/L	0.00442	0.2536	mg/L	0.00442	1.74%
Co 228.616†	101497.4	2.598	mg/L	0.0337	2.598	mg/L	0.0337	1.30%
Ni 232.003†	47643.2	2.577	mg/L	0.0335	2.577	mg/L	0.0335	1.30%
Ba 233.527†	912181.6	10.29	mg/L	0.072	10.29	mg/L	0.072	0.70%
Mn 257.610†	1677122.5	2.560	mg/L	0.0180	2.560	mg/L	0.0180	0.70%
Cr 267.716†	148768.1	1.052	mg/L	0.0139	1.052	mg/L	0.0139	1.32%
Fe 273.955†	116437.3	5.227	mg/L	0.0731	5.227	mg/L	0.0731	1.40%
Mg 279.077†	534056.8	25.24	mg/L	0.214	25.24	mg/L	0.214	0.85%
V 292.402†	541635.5	2.535	mg/L	0.0179	2.535	mg/L	0.0179	0.71%
Al 308.215†	192367.5	10.36	mg/L	0.124	10.36	mg/L	0.124	1.20%
Be 313.107†	940418.2	0.25308	mg/L	0.001572	0.25308	mg/L	0.001572	0.62%
Cu 324.752†	298006.8	1.305	mg/L	0.0162	1.305	mg/L	0.0162	1.24%
Ag 338.289†	130086.2	1.315	mg/L	0.0147	1.315	mg/L	0.0147	1.12%
Na 330.237†	15374.6	24.45	mg/L	0.257	24.45	mg/L	0.257	1.05%
Ca 227.546†	6267.0	25.30	mg/L	0.036	25.30	mg/L	0.036	0.14%
Al RADIAL†	11858.0	10.61	mg/L	0.078	10.61	mg/L	0.078	0.73%
Fe RADIAL†	1981.4	5.101	mg/L	0.0743	5.101	mg/L	0.0743	1.46%
Ca RADIAL†	98989.9	25.16	mg/L	0.147	25.16	mg/L	0.147	0.58%
K RADIAL†	5673.3	5.178	mg/L	0.0535	5.178	mg/L	0.0535	1.03%
Mg RADIAL†	11609.8	25.36	mg/L	0.222	25.36	mg/L	0.222	0.88%
Na RADIAL†	80442.9	27.33	mg/L	0.011	27.33	mg/L	0.011	0.04%

Sequence No.: 130
Sample ID: SEQ-CCBB
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 10/31/2018 4:23:29 PM
Data Type: Reprocessed on 11/1/2018 9:10:04 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCBB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	16606125.9	5.023	mg/L	0.0200				0.40%
Y RADIAL	264040.1	5.091	mg/L	0.0183				0.36%
As 188.979†	4.4	0.0028	mg/L	0.00227	0.0028	mg/L	0.00227	80.54%
Tl 190.801†	15.5	0.0084	mg/L	0.00581	0.0084	mg/L	0.00581	69.01%
Se 196.026†	-13.8	-0.0073	mg/L	0.00727	-0.0073	mg/L	0.00727	99.83%
Zn 206.200†	188.0	0.0048	mg/L	0.00020	0.0048	mg/L	0.00020	4.15%
Sb 206.836†	-5.0	-0.0022	mg/L	0.00143	-0.0022	mg/L	0.00143	66.28%
Pb 220.353†	-16.2	-0.0014	mg/L	0.00059	-0.0014	mg/L	0.00059	43.50%
Cd 226.502†	18.9	0.0001	mg/L	0.00003	0.0001	mg/L	0.00003	23.95%
Co 228.616†	4.0	0.0001	mg/L	0.00035	0.0001	mg/L	0.00035	340.59%
Ni 232.003†	15.5	0.0008	mg/L	0.00079	0.0008	mg/L	0.00079	93.41%
Ba 233.527†	11.6	0.0001	mg/L	0.00007	0.0001	mg/L	0.00007	53.59%
Mn 257.610†	32.0	0.0000	mg/L	0.00001	0.0000	mg/L	0.00001	20.53%
Cr 267.716†	14.7	0.0001	mg/L	0.00030	0.0001	mg/L	0.00030	290.19%
Fe 273.955†	-73.7	-0.0033	mg/L	0.00105	-0.0033	mg/L	0.00105	31.58%
Mg 279.077†	38.0	0.0018	mg/L	0.00496	0.0018	mg/L	0.00496	276.53%
V 292.402†	59.2	0.0003	mg/L	0.00020	0.0003	mg/L	0.00020	71.86%
Al 308.215†	8.0	0.0004	mg/L	0.00625	0.0004	mg/L	0.00625	>999.9%
Be 313.107†	80.0	0.00002	mg/L	0.000020	0.00002	mg/L	0.000020	94.09%
Cu 324.752†	-158.1	-0.0007	mg/L	0.00032	-0.0007	mg/L	0.00032	45.66%
Ag 338.289†	-20.6	-0.0002	mg/L	0.00075	-0.0002	mg/L	0.00075	357.66%
Na 330.237†	-79.4	-0.1259	mg/L	0.11437	-0.1259	mg/L	0.11437	90.87%
Ca 227.546†	38.7	0.1558	mg/L	0.14288	0.1558	mg/L	0.14288	91.71%
Al RADIAL†	-14.9	-0.0134	mg/L	0.03556	-0.0134	mg/L	0.03556	265.83%
Fe RADIAL†	3.0	0.0076	mg/L	0.01103	0.0076	mg/L	0.01103	144.71%
Ca RADIAL†	370.3	0.0941	mg/L	0.00129	0.0941	mg/L	0.00129	1.37%
K RADIAL†	59.6	0.0543	mg/L	0.05050	0.0543	mg/L	0.05050	92.93%
Mg RADIAL†	1.2	0.0026	mg/L	0.01292	0.0026	mg/L	0.01292	494.81%
Na RADIAL†	283.4	0.0963	mg/L	0.01073	0.0963	mg/L	0.01073	11.15%

Sequence No.: 131
Sample ID: 18J1263-04
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 241
Date Collected: 10/31/2018 4:25:59 PM
Data Type: Reprocessed on 11/1/2018 9:10:04 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-04

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	14769601.5	4.467	mg/L	0.0225				0.50%
Y RADIAL	242694.5	4.680	mg/L	0.0104				0.22%
As 188.979†	1.9	0.0012	mg/L	0.00305	0.0012	mg/L	0.00305	253.91%
Tl 190.801†	-2.0	-0.0011	mg/L	0.00735	-0.0011	mg/L	0.00735	689.28%
Se 196.026†	303.5	0.1594	mg/L	0.00399	0.1594	mg/L	0.00399	2.50%
Zn 206.200†	1121.4	0.0288	mg/L	0.00030	0.0288	mg/L	0.00030	1.03%
Sb 206.836†	-12.6	-0.0054	mg/L	0.00744	-0.0054	mg/L	0.00744	138.30%
Pb 220.353†	-53.9	-0.0017	mg/L	0.00171	-0.0017	mg/L	0.00171	101.62%
Cd 226.502†	32.4	0.0002	mg/L	0.00005	0.0002	mg/L	0.00005	22.36%
Co 228.616†	1.4	0.0000	mg/L	0.00006	0.0000	mg/L	0.00006	135.27%
Ni 232.003†	-51.8	-0.0028	mg/L	0.00028	-0.0028	mg/L	0.00028	9.78%
Ba 233.527†	2013.2	0.0227	mg/L	0.00021	0.0227	mg/L	0.00021	0.93%
Mn 257.610†	16276.3	0.0249	mg/L	0.00028	0.0249	mg/L	0.00028	1.14%
Cr 267.716†	3369.4	0.0238	mg/L	0.00068	0.0238	mg/L	0.00068	2.87%
Fe 273.955†	6227.2	0.2795	mg/L	0.00233	0.2795	mg/L	0.00233	0.84%
Mg 279.077†	2709484.2	128.0	mg/L	1.25	128.0	mg/L	1.25	0.98%
V 292.402†	311.4	0.0014	mg/L	0.00040	0.0014	mg/L	0.00040	27.50%
Al 308.215†	5778.0	0.3016	mg/L	0.00626	0.3016	mg/L	0.00626	2.08%
Be 313.107†	-864.7	-0.00023	mg/L	0.000031	-0.00023	mg/L	0.000031	13.17%
Cu 324.752†	2668.0	0.0117	mg/L	0.00021	0.0117	mg/L	0.00021	1.80%
Ag 338.289†	250.2	0.0003	mg/L	0.00066	0.0003	mg/L	0.00066	217.44%
Na 330.237†	69725.4	110.8	mg/L	0.82	110.8	mg/L	0.82	0.74%
Ca 227.546†	48316.5	194.7	mg/L	1.54	194.7	mg/L	1.54	0.79%
Al RADIAL†	336.1	0.2949	mg/L	0.06412	0.2949	mg/L	0.06412	21.75%
Fe RADIAL†	107.9	0.2777	mg/L	0.01607	0.2777	mg/L	0.01607	5.79%
Ca RADIAL†	778131.4	197.8	mg/L	0.32	197.8	mg/L	0.32	0.16%
K RADIAL†	5537.4	5.053	mg/L	0.1081	5.053	mg/L	0.1081	2.14%
Mg RADIAL†	58312.0	127.4	mg/L	0.79	127.4	mg/L	0.79	0.62%
Na RADIAL†	335697.8	114.1	mg/L	0.40	114.1	mg/L	0.40	0.35%

Sequence No.: 132
Sample ID: 18J1263-05
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 242
Date Collected: 10/31/2018 4:28:40 PM
Data Type: Reprocessed on 11/1/2018 9:10:05 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	14668453.4	4.437	mg/L	0.0244				0.55%
Y RADIAL	239417.7	4.617	mg/L	0.0686				1.49%
As 188.979†	17.7	0.0115	mg/L	0.00212	0.0115	mg/L	0.00212	18.34%
Tl 190.801†	15.3	0.0085	mg/L	0.00270	0.0085	mg/L	0.00270	31.88%
Se 196.026†	108.5	0.0513	mg/L	0.00190	0.0513	mg/L	0.00190	3.70%
Zn 206.200†	995.7	0.0255	mg/L	0.00026	0.0255	mg/L	0.00026	1.02%
Sb 206.836†	2.7	0.0019	mg/L	0.00506	0.0019	mg/L	0.00506	259.77%
Pb 220.353†	-3.3	0.0005	mg/L	0.00057	0.0005	mg/L	0.00057	123.02%
Cd 226.502†	61.6	-0.0003	mg/L	0.00004	-0.0003	mg/L	0.00004	13.18%
Co 228.616†	124.9	0.0035	mg/L	0.00019	0.0035	mg/L	0.00019	5.51%
Ni 232.003†	723.1	0.0386	mg/L	0.00059	0.0386	mg/L	0.00059	1.54%
Ba 233.527†	45302.7	0.5108	mg/L	0.00442	0.5108	mg/L	0.00442	0.86%
Mn 257.610†	2060003.5	3.145	mg/L	0.0261	3.145	mg/L	0.0261	0.83%
Cr 267.716†	6672.5	0.0473	mg/L	0.00013	0.0473	mg/L	0.00013	0.27%
Fe 273.955†	203810.5	9.149	mg/L	0.0586	9.149	mg/L	0.0586	0.64%
Mg 279.077†	783679.1	37.03	mg/L	0.322	37.03	mg/L	0.322	0.87%
V 292.402†	409.0	0.0012	mg/L	0.00028	0.0012	mg/L	0.00028	23.01%
Al 308.215†	7467.6	0.3989	mg/L	0.00399	0.3989	mg/L	0.00399	1.00%
Be 313.107†	-889.2	-0.00024	mg/L	0.000039	-0.00024	mg/L	0.000039	16.44%
Cu 324.752†	2320.1	0.0102	mg/L	0.00088	0.0102	mg/L	0.00088	8.59%
Ag 338.289†	100.0	0.0000	mg/L	0.00090	0.0000	mg/L	0.00090	>999.9%
Na 330.237†	273305.1	433.9	mg/L	2.95	433.9	mg/L	2.95	0.68%
Ca 227.546†	26727.9	107.8	mg/L	0.70	107.8	mg/L	0.70	0.65%
Al RADIAL†	379.5	0.3373	mg/L	0.02660	0.3373	mg/L	0.02660	7.89%
Fe RADIAL†	3642.7	9.377	mg/L	0.1486	9.377	mg/L	0.1486	1.58%
Ca RADIAL†	429350.3	109.1	mg/L	0.05	109.1	mg/L	0.05	0.05%
K RADIAL†	3907.2	3.566	mg/L	0.0640	3.566	mg/L	0.0640	1.79%
Mg RADIAL†	17729.9	38.73	mg/L	0.442	38.73	mg/L	0.442	1.14%
Na RADIAL†	1154763.6	392.4	mg/L	2.66	392.4	mg/L	2.66	0.68%

Sequence No.: 133
Sample ID: 18J1263-06
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 243
Date Collected: 10/31/2018 4:31:16 PM
Data Type: Reprocessed on 11/1/2018 9:10:05 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-06

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	14029207.3	4.243	mg/L	0.0062				0.15%
Y RADIAL	234507.4	4.522	mg/L	0.0470				1.04%
As 188.979†	39.7	0.0265	mg/L	0.00372	0.0265	mg/L	0.00372	14.07%
Tl 190.801†	60.9	0.0340	mg/L	0.00348	0.0340	mg/L	0.00348	10.22%
Se 196.026†	113.7	0.0244	mg/L	0.00947	0.0244	mg/L	0.00947	38.76%
Zn 206.200†	4417.8	0.1130	mg/L	0.00066	0.1130	mg/L	0.00066	0.59%
Sb 206.836†	-18.6	-0.0031	mg/L	0.00474	-0.0031	mg/L	0.00474	155.55%
Pb 220.353†	42.9	0.0024	mg/L	0.00264	0.0024	mg/L	0.00264	107.92%
Cd 226.502†	598.8	-0.0002	mg/L	0.00008	-0.0002	mg/L	0.00008	38.14%
Co 228.616†	145.3	0.0055	mg/L	0.00031	0.0055	mg/L	0.00031	5.73%
Ni 232.003†	170.1	0.0063	mg/L	0.00353	0.0063	mg/L	0.00353	55.95%
Ba 233.527†	125436.6	1.414	mg/L	0.0024	1.414	mg/L	0.0024	0.17%
Mn 257.610†	12019601.6	18.35	mg/L	0.076	18.35	mg/L	0.076	0.41%
Cr 267.716†	2587.1	0.0189	mg/L	0.00067	0.0189	mg/L	0.00067	3.56%
Fe 273.955†	1275455.1	57.26	mg/L	0.105	57.26	mg/L	0.105	0.18%
Mg 279.077†	985119.8	46.54	mg/L	0.112	46.54	mg/L	0.112	0.24%
V 292.402†	1420.0	0.0023	mg/L	0.00047	0.0023	mg/L	0.00047	20.55%
Al 308.215†	11001.0	0.5886	mg/L	0.00619	0.5886	mg/L	0.00619	1.05%
Be 313.107†	-1142.6	-0.00031	mg/L	0.000015	-0.00031	mg/L	0.000015	4.90%
Cu 324.752†	2932.8	0.0134	mg/L	0.00027	0.0134	mg/L	0.00027	1.99%
Ag 338.289†	101.2	-0.0007	mg/L	0.00099	-0.0007	mg/L	0.00099	133.74%
Na 330.237†	434708.2	690.4	mg/L	0.71	690.4	mg/L	0.71	0.10%
Ca 227.546†	72366.9	292.1	mg/L	0.56	292.1	mg/L	0.56	0.19%
Al RADIAL†	550.9	0.4906	mg/L	0.01346	0.4906	mg/L	0.01346	2.74%
Fe RADIAL†	22520.0	57.97	mg/L	0.880	57.97	mg/L	0.880	1.52%
Ca RADIAL†	1120161.3	284.7	mg/L	0.60	284.7	mg/L	0.60	0.21%
K RADIAL†	14258.9	13.01	mg/L	0.235	13.01	mg/L	0.235	1.80%
Mg RADIAL†	21186.8	46.28	mg/L	0.646	46.28	mg/L	0.646	1.39%
Na RADIAL†	1700293.8	577.8	mg/L	8.25	577.8	mg/L	8.25	1.43%

Sequence No.: 134
Sample ID: 18J1263-07
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 244
Date Collected: 10/31/2018 4:33:24 PM
Data Type: Reprocessed on 11/1/2018 9:10:06 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15221543.5	4.604	mg/L	0.0492				1.07%
Y RADIAL	247638.6	4.775	mg/L	0.1050				2.20%
As 188.979†	2.5	0.0017	mg/L	0.00954	0.0017	mg/L	0.00954	574.64%
Tl 190.801†	-15.1	-0.0082	mg/L	0.00609	-0.0082	mg/L	0.00609	74.35%
Se 196.026†	46.1	0.0235	mg/L	0.00565	0.0235	mg/L	0.00565	24.09%
Zn 206.200†	1468.7	0.0377	mg/L	0.00045	0.0377	mg/L	0.00045	1.19%
Sb 206.836†	-9.8	-0.0041	mg/L	0.00379	-0.0041	mg/L	0.00379	92.99%
Pb 220.353†	66.2	0.0063	mg/L	0.00109	0.0063	mg/L	0.00109	17.19%
Cd 226.502†	26.6	0.0001	mg/L	0.00017	0.0001	mg/L	0.00017	200.30%
Co 228.616†	62.2	0.0016	mg/L	0.00010	0.0016	mg/L	0.00010	6.07%
Ni 232.003†	-17.7	-0.0010	mg/L	0.00029	-0.0010	mg/L	0.00029	28.25%
Ba 233.527†	5133.9	0.0579	mg/L	0.00068	0.0579	mg/L	0.00068	1.18%
Mn 257.610†	127681.3	0.1950	mg/L	0.00148	0.1950	mg/L	0.00148	0.76%
Cr 267.716†	1915.6	0.0136	mg/L	0.00036	0.0136	mg/L	0.00036	2.65%
Fe 273.955†	28770.4	1.292	mg/L	0.0049	1.292	mg/L	0.0049	0.38%
Mg 279.077†	404977.1	19.14	mg/L	0.085	19.14	mg/L	0.085	0.45%
V 292.402†	861.8	0.0039	mg/L	0.00019	0.0039	mg/L	0.00019	4.87%
Al 308.215†	15553.3	0.8358	mg/L	0.01208	0.8358	mg/L	0.01208	1.45%
Be 313.107†	306.3	0.00008	mg/L	0.000086	0.00008	mg/L	0.000086	103.86%
Cu 324.752†	2838.2	0.0124	mg/L	0.00032	0.0124	mg/L	0.00032	2.54%
Ag 338.289†	114.4	0.0005	mg/L	0.00152	0.0005	mg/L	0.00152	279.48%
Na 330.237†	16300.0	25.93	mg/L	0.095	25.93	mg/L	0.095	0.37%
Ca 227.546†	13626.9	54.92	mg/L	0.150	54.92	mg/L	0.150	0.27%
Al RADIAL†	991.6	0.8858	mg/L	0.02507	0.8858	mg/L	0.02507	2.83%
Fe RADIAL†	509.6	1.312	mg/L	0.0465	1.312	mg/L	0.0465	3.55%
Ca RADIAL†	225467.1	57.31	mg/L	0.073	57.31	mg/L	0.073	0.13%
K RADIAL†	3990.9	3.642	mg/L	0.0673	3.642	mg/L	0.0673	1.85%
Mg RADIAL†	8837.8	19.31	mg/L	0.424	19.31	mg/L	0.424	2.19%
Na RADIAL†	95567.4	32.47	mg/L	0.261	32.47	mg/L	0.261	0.81%

Sequence No.: 135
Sample ID: 18J1263-08
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 245
Date Collected: 10/31/2018 4:35:53 PM
Data Type: Reprocessed on 11/1/2018 9:10:06 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-08

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15333324.9	4.638	mg/L	0.0283				0.61%
Y RADIAL	247433.1	4.771	mg/L	0.0220				0.46%
As 188.979†	3.7	0.0025	mg/L	0.00482	0.0025	mg/L	0.00482	196.66%
Tl 190.801†	29.3	0.0160	mg/L	0.00402	0.0160	mg/L	0.00402	25.15%
Se 196.026†	154.2	0.0777	mg/L	0.00834	0.0777	mg/L	0.00834	10.74%
Zn 206.200†	424.9	0.0109	mg/L	0.00044	0.0109	mg/L	0.00044	4.00%
Sb 206.836†	-8.1	-0.0030	mg/L	0.00450	-0.0030	mg/L	0.00450	149.32%
Pb 220.353†	-26.1	-0.0016	mg/L	0.00306	-0.0016	mg/L	0.00306	197.02%
Cd 226.502†	75.8	0.0001	mg/L	0.00016	0.0001	mg/L	0.00016	149.92%
Co 228.616†	103.9	0.0028	mg/L	0.00045	0.0028	mg/L	0.00045	15.86%
Ni 232.003†	140.6	0.0073	mg/L	0.00055	0.0073	mg/L	0.00055	7.47%
Ba 233.527†	7592.7	0.0856	mg/L	0.00042	0.0856	mg/L	0.00042	0.49%
Mn 257.610†	5155320.9	7.868	mg/L	0.0359	7.868	mg/L	0.0359	0.46%
Cr 267.716†	502.8	0.0036	mg/L	0.00046	0.0036	mg/L	0.00046	12.80%
Fe 273.955†	120468.4	5.408	mg/L	0.0588	5.408	mg/L	0.0588	1.09%
Mg 279.077†	1019179.6	48.16	mg/L	0.624	48.16	mg/L	0.624	1.30%
V 292.402†	-119.5	-0.0010	mg/L	0.00029	-0.0010	mg/L	0.00029	29.41%
Al 308.215†	526.8	0.0250	mg/L	0.00451	0.0250	mg/L	0.00451	18.02%
Be 313.107†	-233.1	-0.00006	mg/L	0.000017	-0.00006	mg/L	0.000017	27.83%
Cu 324.752†	1298.4	0.0057	mg/L	0.00034	0.0057	mg/L	0.00034	5.89%
Ag 338.289†	-8.0	-0.0008	mg/L	0.00062	-0.0008	mg/L	0.00062	73.37%
Na 330.237†	20779.0	33.08	mg/L	0.306	33.08	mg/L	0.306	0.92%
Ca 227.546†	18829.0	75.92	mg/L	0.496	75.92	mg/L	0.496	0.65%
Al RADIAL†	-17.0	-0.0170	mg/L	0.00253	-0.0170	mg/L	0.00253	14.87%
Fe RADIAL†	2155.5	5.549	mg/L	0.0468	5.549	mg/L	0.0468	0.84%
Ca RADIAL†	313596.7	79.71	mg/L	0.224	79.71	mg/L	0.224	0.28%
K RADIAL†	3424.0	3.125	mg/L	0.0318	3.125	mg/L	0.0318	1.02%
Mg RADIAL†	22510.5	49.17	mg/L	0.280	49.17	mg/L	0.280	0.57%
Na RADIAL†	119528.9	40.62	mg/L	0.390	40.62	mg/L	0.390	0.96%

Sequence No.: 136
Sample ID: 18J1263-10
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 246
Date Collected: 10/31/2018 4:38:23 PM
Data Type: Reprocessed on 11/1/2018 9:10:07 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: 18J1263-10

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	16043751.2	4.853	mg/L	0.0127				0.26%
Y RADIAL	256517.7	4.946	mg/L	0.0724				1.46%
As 188.979†	-5.2	-0.0034	mg/L	0.00404	-0.0034	mg/L	0.00404	119.55%
Tl 190.801†	1.7	0.0009	mg/L	0.00192	0.0009	mg/L	0.00192	210.19%
Se 196.026†	-13.1	-0.0069	mg/L	0.00812	-0.0069	mg/L	0.00812	116.98%
Zn 206.200†	454.4	0.0117	mg/L	0.00015	0.0117	mg/L	0.00015	1.27%
Sb 206.836†	3.3	0.0014	mg/L	0.00402	0.0014	mg/L	0.00402	283.31%
Pb 220.353†	0.0	0.0000	mg/L	0.00071	0.0000	mg/L	0.00071	>999.9%
Cd 226.502†	-4.3	0.0000	mg/L	0.00006	0.0000	mg/L	0.00006	168.22%
Co 228.616†	-7.7	-0.0002	mg/L	0.00026	-0.0002	mg/L	0.00026	133.72%
Ni 232.003†	-89.2	-0.0048	mg/L	0.00102	-0.0048	mg/L	0.00102	21.14%
Ba 233.527†	76.5	0.0009	mg/L	0.00024	0.0009	mg/L	0.00024	27.41%
Mn 257.610†	763.9	0.0012	mg/L	0.00002	0.0012	mg/L	0.00002	1.52%
Cr 267.716†	14.3	0.0001	mg/L	0.00002	0.0001	mg/L	0.00002	23.48%
Fe 273.955†	1437.1	0.0645	mg/L	0.00069	0.0645	mg/L	0.00069	1.07%
Mg 279.077†	153.9	0.0073	mg/L	0.00379	0.0073	mg/L	0.00379	52.26%
V 292.402†	65.7	0.0003	mg/L	0.00028	0.0003	mg/L	0.00028	91.01%
Al 308.215†	1201.3	0.0647	mg/L	0.00280	0.0647	mg/L	0.00280	4.33%
Be 313.107†	40.6	0.00001	mg/L	0.000056	0.00001	mg/L	0.000056	512.21%
Cu 324.752†	112.0	0.0005	mg/L	0.00014	0.0005	mg/L	0.00014	28.65%
Ag 338.289†	-10.4	-0.0001	mg/L	0.00089	-0.0001	mg/L	0.00089	859.62%
Na 330.237†	98.3	0.1563	mg/L	0.07817	0.1563	mg/L	0.07817	50.00%
Ca 227.546†	8.7	0.0358	mg/L	0.06750	0.0358	mg/L	0.06750	188.36%
Al RADIAL†	54.0	0.0484	mg/L	0.03324	0.0484	mg/L	0.03324	68.73%
Fe RADIAL†	27.0	0.0696	mg/L	0.00983	0.0696	mg/L	0.00983	14.13%
Ca RADIAL†	109.8	0.0279	mg/L	0.00598	0.0279	mg/L	0.00598	21.43%
K RADIAL†	79.5	0.0726	mg/L	0.02650	0.0726	mg/L	0.02650	36.51%
Mg RADIAL†	12.0	0.0261	mg/L	0.02919	0.0261	mg/L	0.02919	111.81%
Na RADIAL†	689.6	0.2343	mg/L	0.03005	0.2343	mg/L	0.03005	12.82%

Sequence No.: 137
Sample ID: SEQ-SRD6
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 247
Date Collected: 10/31/2018 4:40:51 PM
Data Type: Reprocessed on 11/1/2018 9:10:07 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-SRD6

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	15742565.3	4.761	mg/L	0.0596				1.25%
Y RADIAL	254557.5	4.908	mg/L	0.0454				0.92%
As 188.979†	3.2	0.0021	mg/L	0.00629	0.0021	mg/L	0.00629	300.90%
Tl 190.801†	8.1	0.0044	mg/L	0.00284	0.0044	mg/L	0.00284	64.26%
Se 196.026†	44.2	0.0224	mg/L	0.00144	0.0224	mg/L	0.00144	6.44%
Zn 206.200†	936.8	0.0240	mg/L	0.00007	0.0240	mg/L	0.00007	0.30%
Sb 206.836†	-12.2	-0.0051	mg/L	0.00162	-0.0051	mg/L	0.00162	31.64%
Pb 220.353†	-35.7	-0.0028	mg/L	0.00149	-0.0028	mg/L	0.00149	53.72%
Cd 226.502†	32.1	0.0001	mg/L	0.00011	0.0001	mg/L	0.00011	100.95%
Co 228.616†	17.2	0.0005	mg/L	0.00026	0.0005	mg/L	0.00026	54.47%
Ni 232.003†	23.2	0.0012	mg/L	0.00266	0.0012	mg/L	0.00266	225.50%
Ba 233.527†	2092.8	0.0236	mg/L	0.00049	0.0236	mg/L	0.00049	2.07%
Mn 257.610†	1425413.5	2.175	mg/L	0.0730	2.175	mg/L	0.0730	3.36%
Cr 267.716†	267.8	0.0019	mg/L	0.00004	0.0019	mg/L	0.00004	2.34%
Fe 273.955†	33791.7	1.517	mg/L	0.0530	1.517	mg/L	0.0530	3.49%
Mg 279.077†	280724.5	13.27	mg/L	0.456	13.27	mg/L	0.456	3.44%
V 292.402†	5.8	-0.0001	mg/L	0.00026	-0.0001	mg/L	0.00026	311.14%
Al 308.215†	6063.4	0.3257	mg/L	0.00444	0.3257	mg/L	0.00444	1.36%
Be 313.107†	490.8	0.00013	mg/L	0.000016	0.00013	mg/L	0.000016	12.35%
Cu 324.752†	448.4	0.0020	mg/L	0.00006	0.0020	mg/L	0.00006	3.21%
Ag 338.289†	22.9	0.0000	mg/L	0.00039	0.0000	mg/L	0.00039	>999.9%
Na 330.237†	5117.9	8.149	mg/L	0.1907	8.149	mg/L	0.1907	2.34%
Ca 227.546†	5391.1	21.74	mg/L	0.558	21.74	mg/L	0.558	2.57%
Al RADIAL†	412.3	0.3685	mg/L	0.00616	0.3685	mg/L	0.00616	1.67%
Fe RADIAL†	572.2	1.473	mg/L	0.0543	1.473	mg/L	0.0543	3.69%
Ca RADIAL†	80987.5	20.59	mg/L	0.458	20.59	mg/L	0.458	2.22%
K RADIAL†	897.7	0.8192	mg/L	0.11982	0.8192	mg/L	0.11982	14.63%
Mg RADIAL†	5922.6	12.94	mg/L	0.377	12.94	mg/L	0.377	2.91%
Na RADIAL†	30948.3	10.52	mg/L	0.234	10.52	mg/L	0.234	2.22%

Sequence No.: 141
Sample ID: SEQ-CCVC
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 10
Date Collected: 10/31/2018 4:50:25 PM
Data Type: Reprocessed on 11/1/2018 9:10:09 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCVC

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	15521979.3	4.695	mg/L	0.0262				0.56%
Y RADIAL	252055.4	4.860	mg/L	0.0213				0.44%
As 188.979†	764.2	0.4932	mg/L	0.00377	0.4932	mg/L	0.00377	0.76%
Tl 190.801†	931.5	0.5067	mg/L	0.01062	0.5067	mg/L	0.01062	2.10%
Se 196.026†	952.4	0.4978	mg/L	0.00909	0.4978	mg/L	0.00909	1.83%
Zn 206.200†	97380.8	2.497	mg/L	0.0159	2.497	mg/L	0.0159	0.64%
Sb 206.836†	579.1	0.2491	mg/L	0.00612	0.2491	mg/L	0.00612	2.46%
Pb 220.353†	5949.6	0.4974	mg/L	0.00481	0.4974	mg/L	0.00481	0.97%
Cd 226.502†	35930.9	0.2479	mg/L	0.00134	0.2479	mg/L	0.00134	0.54%
Co 228.616†	100013.1	2.560	mg/L	0.0139	2.560	mg/L	0.0139	0.54%
Ni 232.003†	47345.2	2.561	mg/L	0.0141	2.561	mg/L	0.0141	0.55%
Ba 233.527†	899173.5	10.14	mg/L	0.111	10.14	mg/L	0.111	1.10%
Mn 257.610†	1659772.0	2.533	mg/L	0.0284	2.533	mg/L	0.0284	1.12%
Cr 267.716†	147356.9	1.042	mg/L	0.0062	1.042	mg/L	0.0062	0.59%
Fe 273.955†	114850.4	5.156	mg/L	0.0273	5.156	mg/L	0.0273	0.53%
Mg 279.077†	519739.3	24.56	mg/L	0.294	24.56	mg/L	0.294	1.20%
V 292.402†	537034.3	2.514	mg/L	0.0275	2.514	mg/L	0.0275	1.09%
Al 308.215†	191441.3	10.31	mg/L	0.061	10.31	mg/L	0.061	0.59%
Be 313.107†	928685.5	0.24992	mg/L	0.002823	0.24992	mg/L	0.002823	1.13%
Cu 324.752†	298360.7	1.306	mg/L	0.0062	1.306	mg/L	0.0062	0.47%
Ag 338.289†	129622.5	1.310	mg/L	0.0062	1.310	mg/L	0.0062	0.48%
Na 330.237†	15333.4	24.38	mg/L	0.331	24.38	mg/L	0.331	1.36%
Ca 227.546†	6258.4	25.27	mg/L	0.300	25.27	mg/L	0.300	1.19%
Al RADIAL†	12014.0	10.75	mg/L	0.100	10.75	mg/L	0.100	0.93%
Fe RADIAL†	1957.9	5.040	mg/L	0.0335	5.040	mg/L	0.0335	0.66%
Ca RADIAL†	97381.4	24.75	mg/L	0.050	24.75	mg/L	0.050	0.20%
K RADIAL†	5640.1	5.147	mg/L	0.0659	5.147	mg/L	0.0659	1.28%
Mg RADIAL†	11325.8	24.74	mg/L	0.225	24.74	mg/L	0.225	0.91%
Na RADIAL†	84432.3	28.69	mg/L	0.200	28.69	mg/L	0.200	0.70%

Sequence No.: 142
Sample ID: SEQ-CCBC
Analyst: KML
Logged In Analyst (Original) : rqb
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 10/31/2018 4:53:02 PM
Data Type: Reprocessed on 11/1/2018 9:10:09 AM
Initial Sample Vol:
Sample Prep Vol:

Mean Data: SEQ-CCBC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	16160340.4	4.888	mg/L	0.0568				1.16%
Y RADIAL	257497.6	4.965	mg/L	0.0069				0.14%
As 188.979†	6.2	0.0040	mg/L	0.00842	0.0040	mg/L	0.00842	208.77%
Tl 190.801†	7.5	0.0041	mg/L	0.00221	0.0041	mg/L	0.00221	54.24%
Se 196.026†	1.3	0.0007	mg/L	0.00746	0.0007	mg/L	0.00746	>999.9%
Zn 206.200†	157.8	0.0040	mg/L	0.00019	0.0040	mg/L	0.00019	4.72%
Sb 206.836†	-4.1	-0.0018	mg/L	0.00619	-0.0018	mg/L	0.00619	349.36%
Pb 220.353†	-19.9	-0.0017	mg/L	0.00216	-0.0017	mg/L	0.00216	130.11%
Cd 226.502†	1.9	0.0000	mg/L	0.00011	0.0000	mg/L	0.00011	861.00%
Co 228.616†	0.8	0.0000	mg/L	0.00030	0.0000	mg/L	0.00030	>999.9%
Ni 232.003†	-22.8	-0.0012	mg/L	0.00242	-0.0012	mg/L	0.00242	195.75%
Ba 233.527†	26.4	0.0003	mg/L	0.00005	0.0003	mg/L	0.00005	17.92%
Mn 257.610†	58.2	0.0001	mg/L	0.00004	0.0001	mg/L	0.00004	40.46%
Cr 267.716†	-13.3	-0.0001	mg/L	0.00021	-0.0001	mg/L	0.00021	225.32%
Fe 273.955†	-67.8	-0.0030	mg/L	0.00086	-0.0030	mg/L	0.00086	28.32%
Mg 279.077†	84.6	0.0040	mg/L	0.00232	0.0040	mg/L	0.00232	57.97%
V 292.402†	-12.3	-0.0001	mg/L	0.00049	-0.0001	mg/L	0.00049	832.86%
Al 308.215†	91.5	0.0049	mg/L	0.00386	0.0049	mg/L	0.00386	78.35%
Be 313.107†	375.8	0.00010	mg/L	0.000010	0.00010	mg/L	0.000010	9.40%
Cu 324.752†	-80.7	-0.0004	mg/L	0.00033	-0.0004	mg/L	0.00033	92.54%
Ag 338.289†	19.4	0.0002	mg/L	0.00093	0.0002	mg/L	0.00093	474.19%
Na 330.237†	-8.1	-0.0127	mg/L	0.08768	-0.0127	mg/L	0.08768	689.38%
Ca 227.546†	48.9	0.1972	mg/L	0.11893	0.1972	mg/L	0.11893	60.31%
Al RADIAL†	-12.1	-0.0108	mg/L	0.03973	-0.0108	mg/L	0.03973	368.40%
Fe RADIAL†	4.0	0.0104	mg/L	0.01571	0.0104	mg/L	0.01571	150.92%
Ca RADIAL†	397.4	0.1010	mg/L	0.00623	0.1010	mg/L	0.00623	6.17%
K RADIAL†	90.2	0.0824	mg/L	0.06737	0.0824	mg/L	0.06737	81.80%
Mg RADIAL†	5.0	0.0108	mg/L	0.00945	0.0108	mg/L	0.00945	87.33%
Na RADIAL†	176.5	0.0600	mg/L	0.00753	0.0600	mg/L	0.00753	12.55%

York Analytical Laboratories, Inc.
SDG: 18J1263
CLASS: IC
METHOD: EPA 300.0

DATA PACKAGE COVER PAGE

EPA 300.0

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Client Sample Id:	Lab Sample Id:
MW16_102518	18J1263-01
MW5_102518	18J1263-02
MW7_102518	18J1263-03
MW14_102518	18J1263-04
MW13_102518	18J1263-05
MW12_102518	18J1263-06
MW15_102518	18J1263-07
DUP01_102518	18J1263-08
FB01_102518	18J1263-10

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the project narrative. Release of the data contained in this hardcopy data package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the

Signature:  Name: Benjamin Gulizia

Date: 11/5/2018 Title: Laboratory Director

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

MW16_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-01 File ID: QBIC1-103018A-18J1263-01_Int

Sampled: 10/25/18 09:20 Prepared: 10/31/18 06:30 Analyzed: 10/31/18 06:30

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

Batch: BJ81780 Sequence: Calibration: 10/31/18 0 Instrument: ECD_1

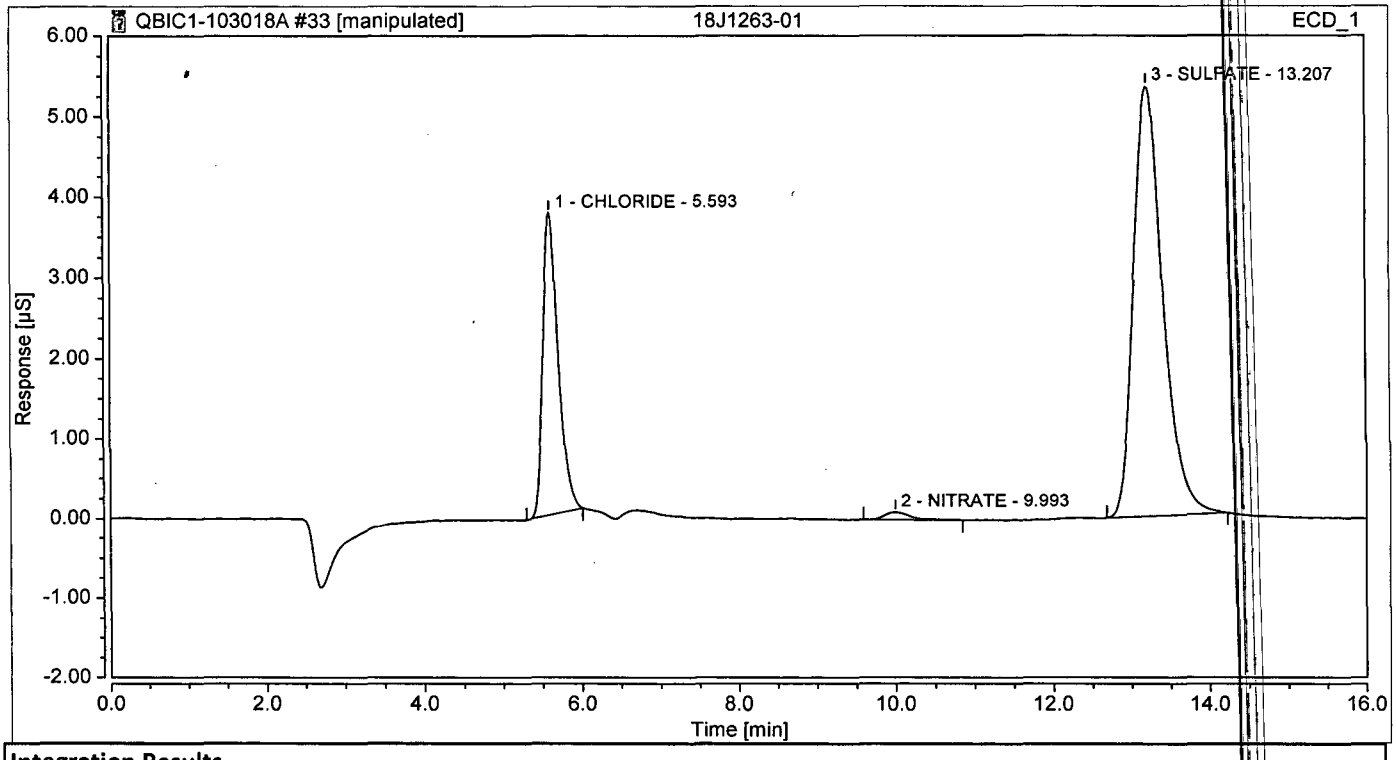
CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	187	10	DE	EPA 300.0

Chromatogram and Results

Injection Details

Injection Name:	**18J1263-01**	*Run Time (min):*	**16.00**
Vial Number:	**29**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 6:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.593	0.849	3.753	26.46	40.82	49.7853
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	NITRATE	9.993	0.036	0.093	1.11	1.01	0.8313
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SULFATE	13.207	2.324	5.349	72.42	58.18	186.8289
Total:			**3.209**	**9.194**	**100.00**	**100.00**	

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

MW5_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-02 File ID: QBIC1-103018A-18J1263-02_Int

Sampled: 10/25/18 15:55 Prepared: 10/31/18 08:16 Analyzed: 10/31/18 08:16

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

Batch: BJ81780 Sequence: Calibration: 10/31/18 0 Instrument: ECD_1

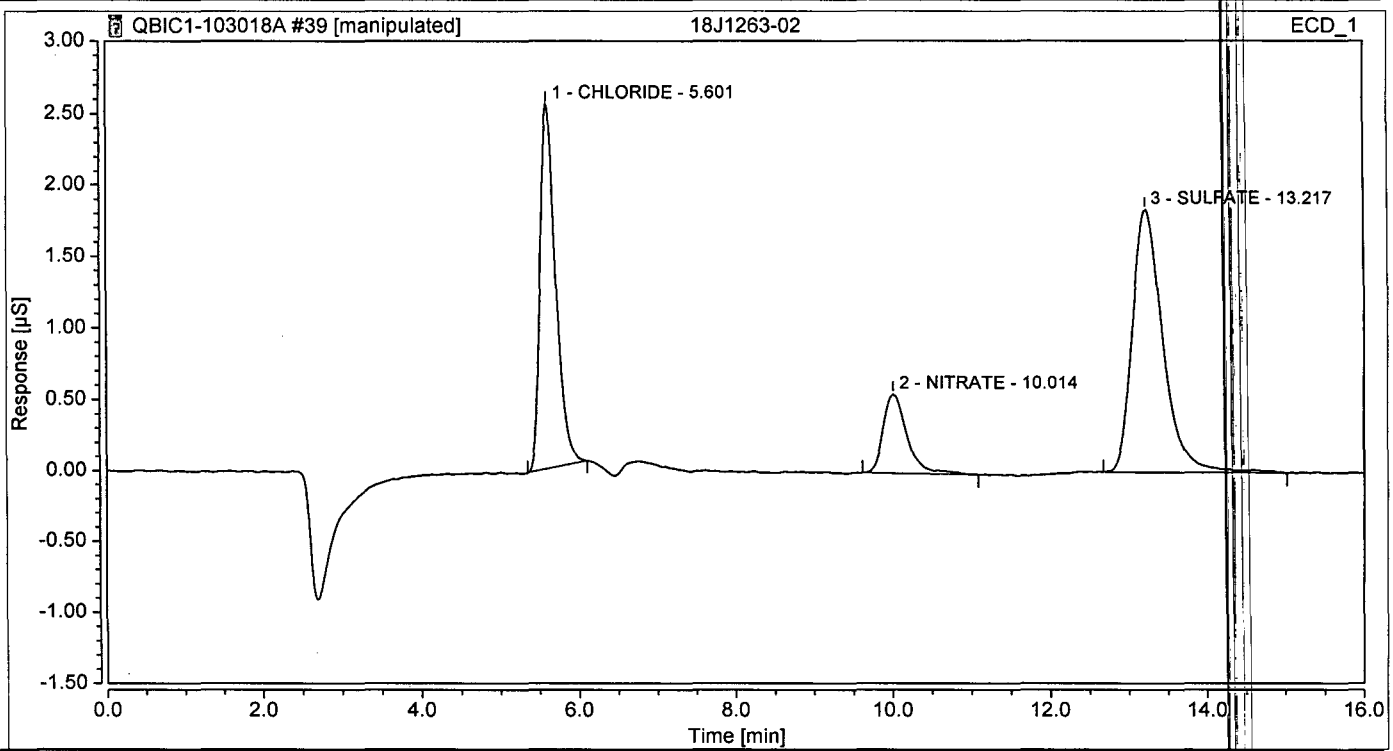
CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	69.6	10	D	EPA 300.0

Chromatogram and Results

Injection Details

Injection Name:	**18J1263-02**	*Run Time (min):*	**16.00**
Vial Number:	**34**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 8:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.601	0.587	2.553	36.25	51.57	34.6660
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	NITRATE	10.014	0.197	0.556	12.15	11.23	4.6429
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SULFATE	13.217	0.835	1.841	51.61	37.20	69.5778
Total:			**1.618**	**4.950**	**100.00**	**100.00**	

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

MW7_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-03 File ID: QBIC1-103018A-18J1263-03_Int

Sampled: 10/25/18 16:05 Prepared: 10/31/18 08:34 Analyzed: 10/31/18 08:34

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

Batch: BJ81780 Sequence: Calibration: 10/31/18 0 Instrument: ECD_1

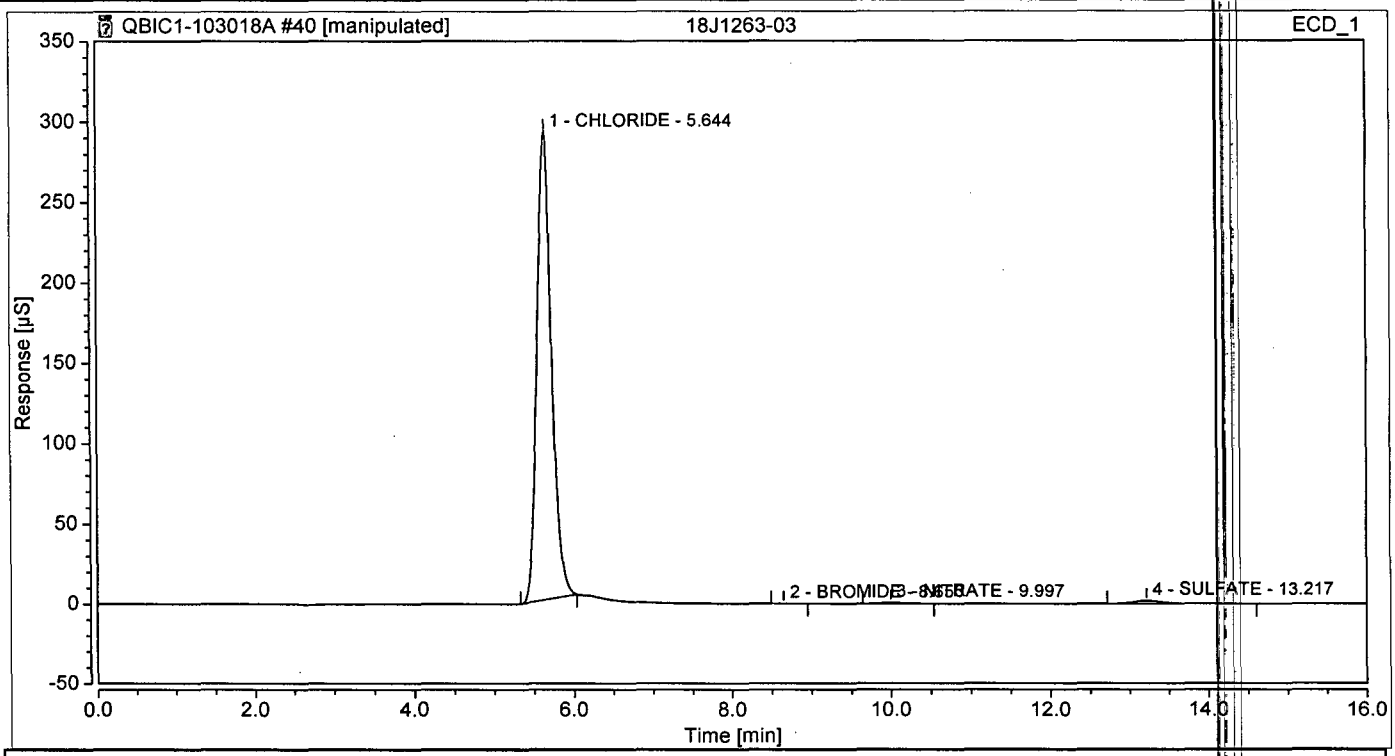
CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	70.5	10	D	EPA 300.0

Chromatogram and Results

Injection Details

Injection Name:	**18J1263-03**	*Run Time (min):*	**16.00**
Vial Number:	**35**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 8:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.644	61.704	290.784	98.27	99.11	1798.8704
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	BROMIDE	8.650	0.009	0.031	0.01	0.01	1.3188
3	NITRATE	9.997	0.231	0.703	0.37	0.24	5.4454
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	13.217	0.846	1.883	1.35	0.64	70.4963
Total:			**62.789**	**293.401**	**100.00**	**100.00**	

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

MW14_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-04 File ID: QBIC2-103118A.seq-52

Sampled: 10/25/18 14:45 Prepared: 11/01/18 09:59 Analyzed: 11/01/18 09:59

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

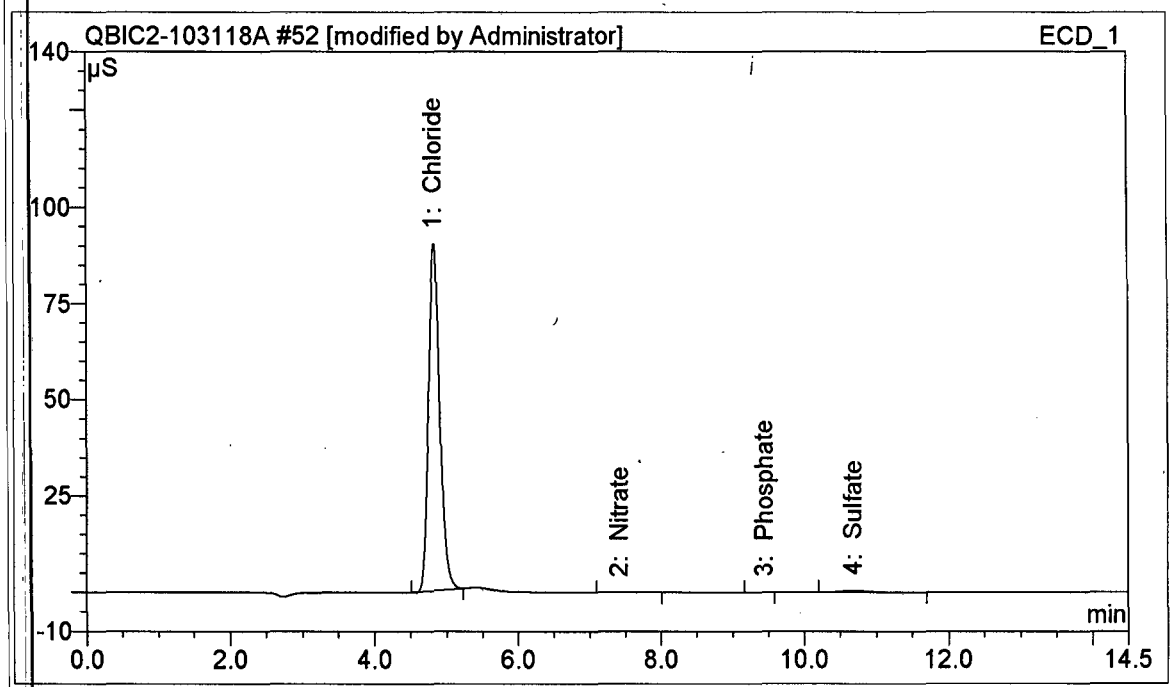
Batch: BK80076 Sequence: Calibration: 11/01/18 0 Instrument: IC

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	73.3	50	D	EPA 300.0

Sample Analysis Report

Sample Name:	18J1263-04	**Sample No.:**	52
Sequence Name:	QBIC2-103118A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	50.0000
Date Time Collected:	11/1/2018 9:59 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Chloride	4.83	16.197	90.302	3420.3968	97.91
2	Nitrate	7.42	0.004	0.012	-0.5006	-0.01
3	Phosphate	9.45	0.001	0.006	0.3765	0.01
4	Sulfate	10.68	0.178	0.430	73.3034	2.10



FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

MW13_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-05 File ID: QBIC1-103018A-18J1263-05_Int

Sampled: 10/25/18 15:10 Prepared: 10/31/18 09:46 Analyzed: 10/31/18 09:46

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

Batch: BJ81780 Sequence: Calibration: 10/31/18 0 Instrument: ECD_1

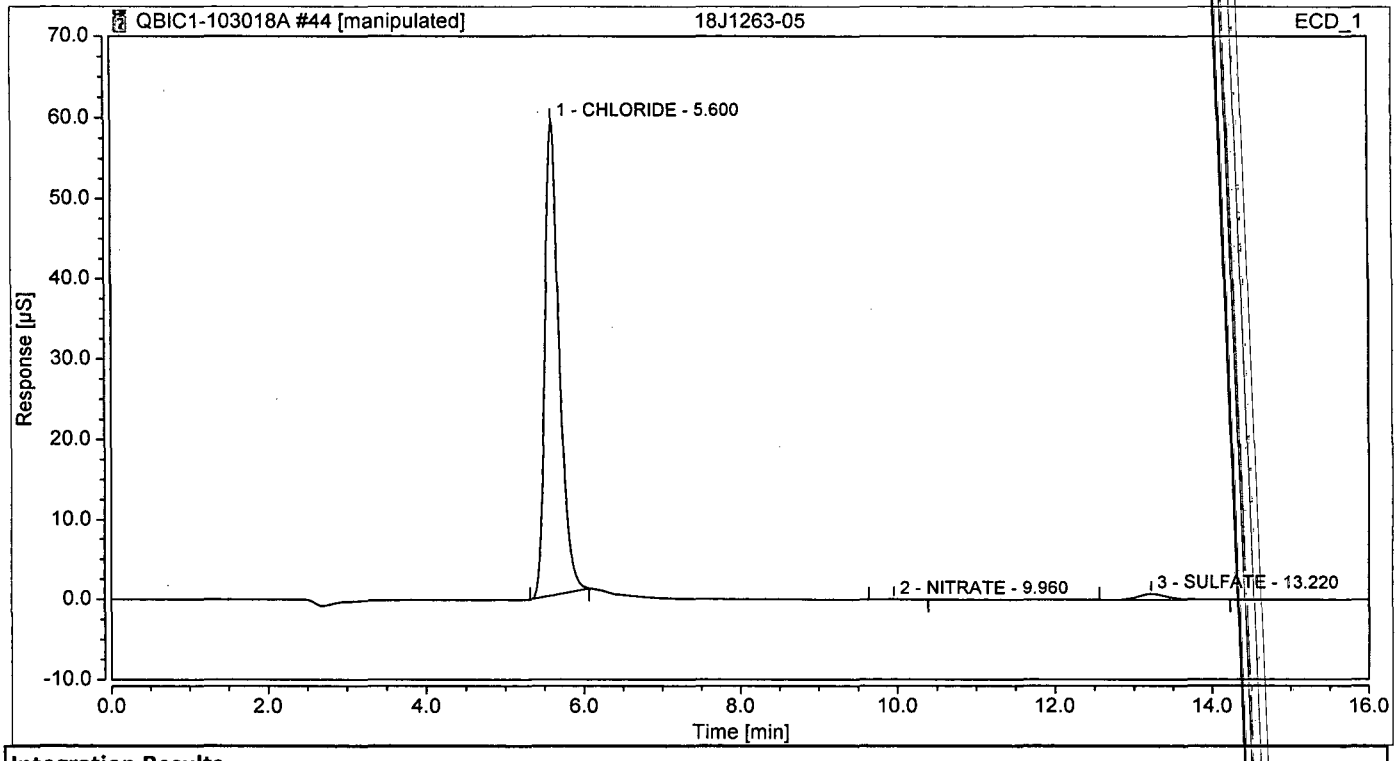
CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	28.8	10	D	EPA 300.0

Chromatogram and Results

Injection Details

Injection Name:	**18J1263-05**	*Run Time (min):*	**16.00**
Vial Number:	**37**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 9:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.600	12.482	58.999	97.30	98.70	564.4717
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	NITRATE	9.960	0.007	0.025	0.05	0.04	0.1384
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SULFATE	13.220	0.339	0.751	2.65	1.26	28.7635
Total:			**12.828**	**59.774**	**100.00**	**100.00**	

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

MW12_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-06 File ID: QBIC1-103018A-18J1263-06_Int

Sampled: 10/25/18 15:20 Prepared: 10/31/18 10:04 Analyzed: 10/31/18 10:04

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

Batch: BJ81780 Sequence: Calibration: 10/31/18 1 Instrument: ECD_1

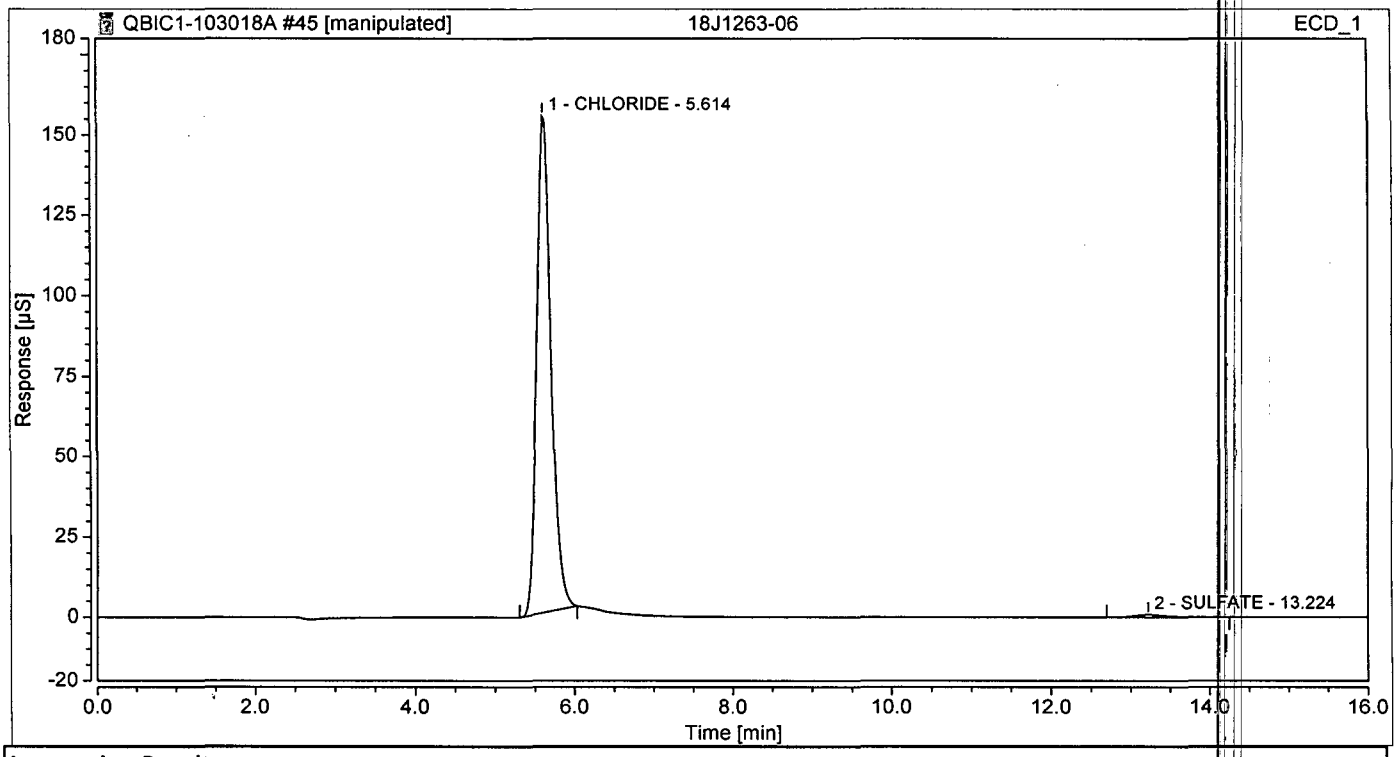
CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	30.0	10	D	EPA 300.0

Chromatogram and Results

Injection Details

Injection Name:	**18J1263-06**	*Run Time (min):*	**16.00**
Vial Number:	**38**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.614	32.313	154.598	98.92	99.49	1155.9703
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	SULFATE	13.224	0.354	0.791	1.08	0.51	30.0104
Total:			**32.667**	**155.389**	**100.00**	**100.00**	

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

MW15_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-07 File ID: QBIC1-103018A-18J1263-07_Int

Sampled: 10/25/18 15:35 Prepared: 10/31/18 10:22 Analyzed: 10/31/18 10:22

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

Batch: BJ81780 Sequence: Calibration: 10/31/18 1 Instrument: ECD_1

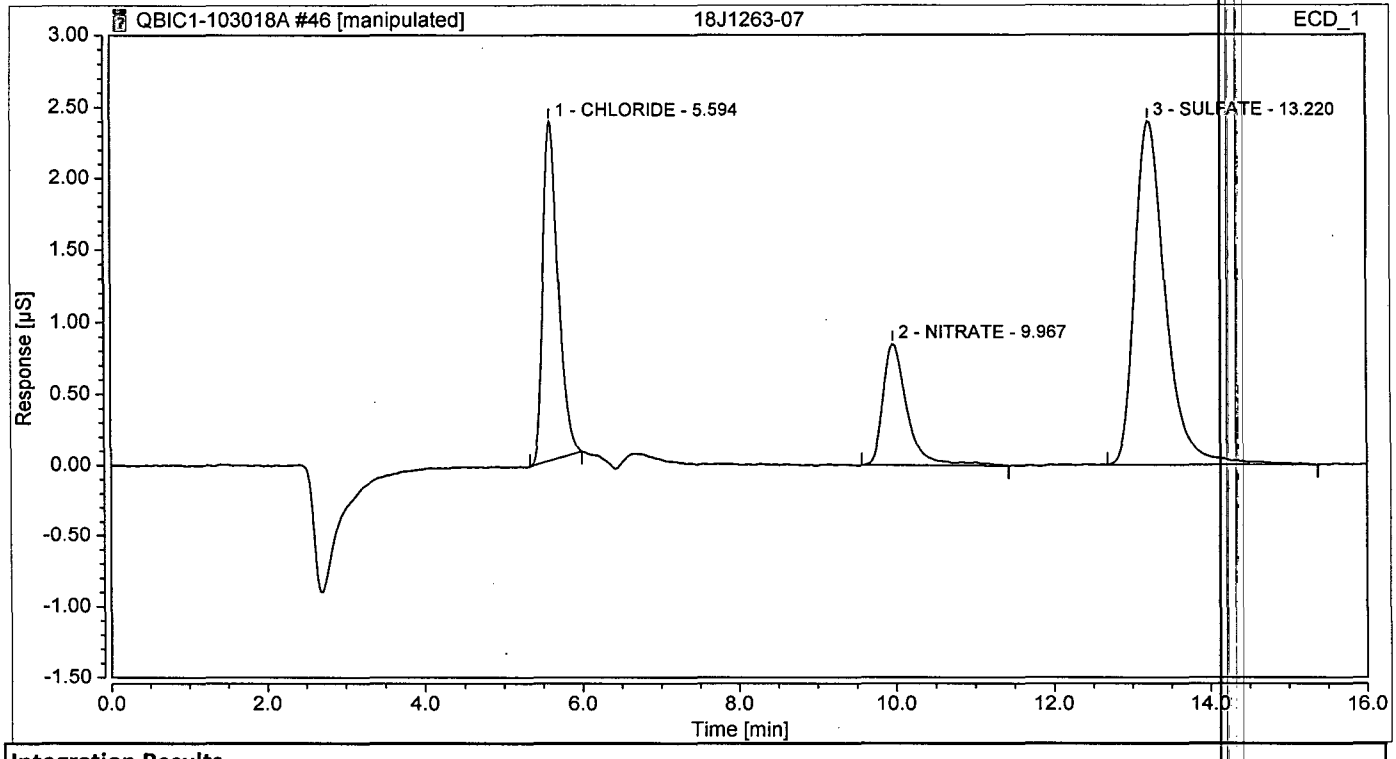
CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	90.6	10	D	EPA 300.0

Chromatogram and Results

Injection Details

Injection Name:	**18J1263-07**	*Run Time (min):*	**16.00**
Vial Number:	**39**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.594	0.534	2.366	27.61	42.13	31.5947
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	NITRATE	9.967	0.305	0.849	15.77	15.12	7.1930
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SULFATE	13.220	1.095	2.400	56.62	42.74	90.5600
Total:			**1.933**	**5.615**	**100.00**	**100.00**	

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

DUP01_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-08 File ID: QBIC1-103018A-18J1263-08_Int

Sampled: 10/25/18 00:00 Prepared: 10/31/18 10:40 Analyzed: 10/31/18 10:40

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

Batch: BJ81780 Sequence: Calibration: 10/31/18 1 Instrument: ECD_1

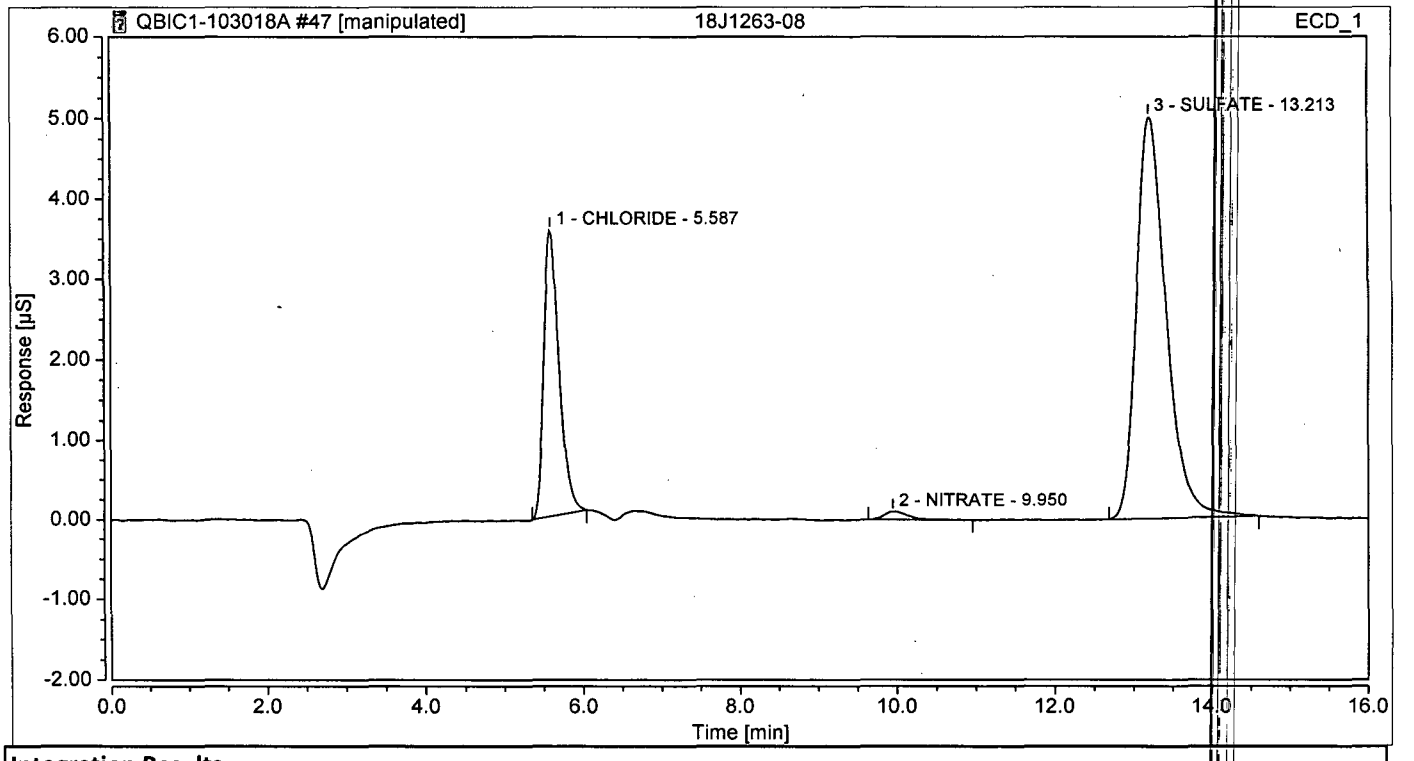
CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	178	10	DE	EPA 300.0

Chromatogram and Results

Injection Details

Injection Name:	**18J1263-08**	*Run Time (min):*	**16.00**
Vial Number:	**40**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.587	0.807	3.573	26.41	41.15	47.3585
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	NITRATE	9.950	0.040	0.104	1.30	1.20	0.9298
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SULFATE	13.213	2.208	5.007	72.29	57.66	177.9893
Total:			**3.055**	**8.684**	**100.00**	**100.00**	

FORM I **INORGANIC ANALYSIS DATA SHEET**

EPA 300.0

FB01_102518

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Matrix: Water Laboratory ID: 18J1263-10 File ID: QBIC1-103018A-18J1263-10_Int

Sampled: 10/25/18 07:15 Prepared: 10/31/18 10:58 Analyzed: 10/31/18 10:58

Solids: 0.00 Preparation: EPA 300 Initial/Final: 5.5 mL / 5.5 mL

Batch: BJ81780 Sequence: Calibration: 10/31/18 1 Instrument: ECD_1

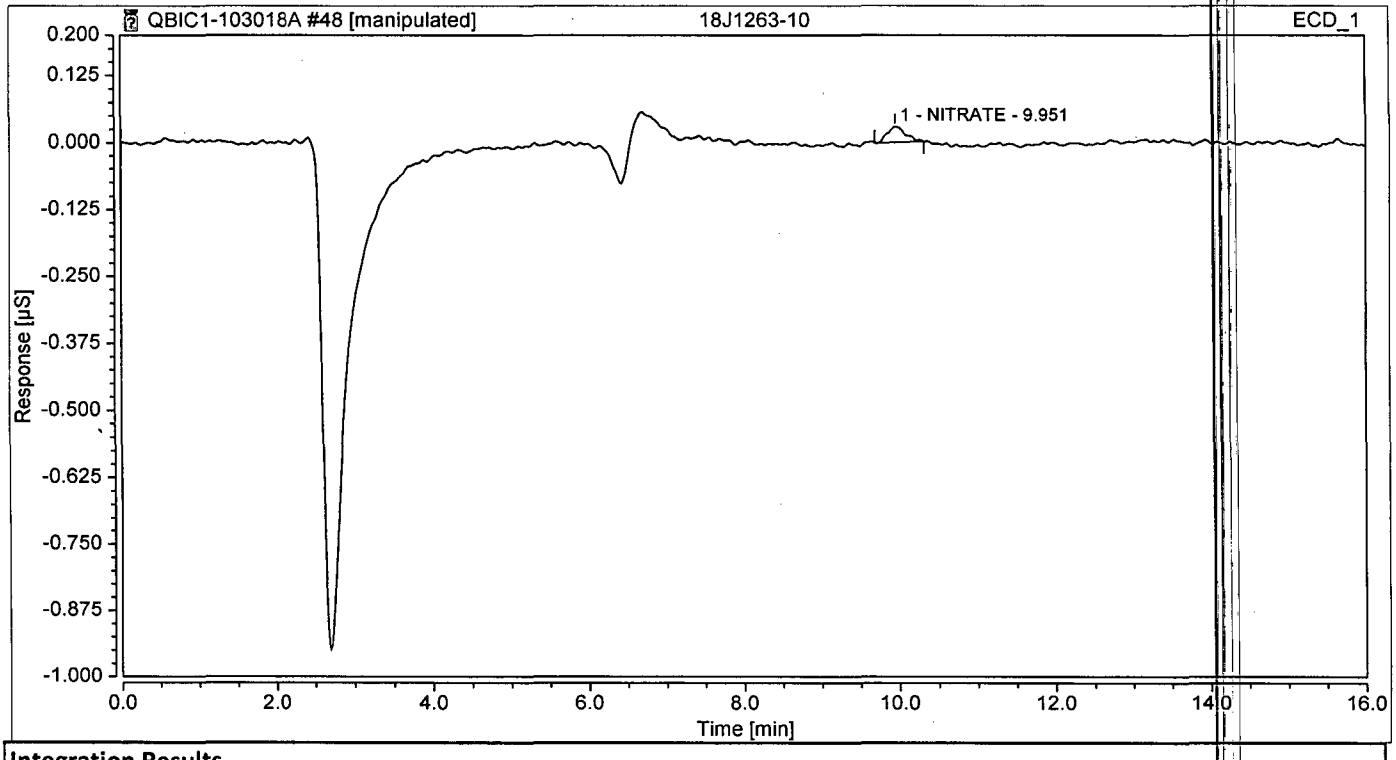
CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	Q	Method
14808-79-8	Sulfate	10.0	10	U	EPA 300.0

Chromatogram and Results

Injection Details

Injection Name:	**18J1263-10**	*Run Time (min):*	**16.00**
Vial Number:	**41**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 10:58**	*Sample Weight:*	**1.0000**

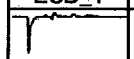
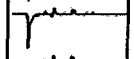
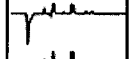
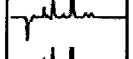
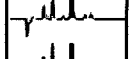
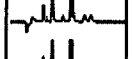
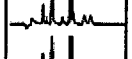
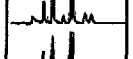
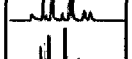
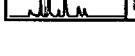
Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	CHLORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	NITRATE	9.951	0.008	0.029	100.00	100.00	0.1709
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SULFATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.008**	**0.029**	**100.00**	**100.00**	

Sequence: ANIONCALSEQ-102818A
Last Update Operator: IonChrome

ECD_1	Name	Type	Level	Comment	Position	Volume [µl]	Instrument Method	Processing Method
	STD1	Calibration Standard	01	0.05 PPM	1	25	Anions061411	AS9HC_Processing Method_061311_total
	STD2	Calibration Standard	02	0.10 PPM	2	25	Anions061411	AS9HC_Processing Method_061311_total
	STD3	Calibration Standard	03	0.20 PPM	3	25	Anions061411	AS9HC_Processing Method_061311_total
	STD4	Calibration Standard	04	0.50 PPM	4	25	Anions061411	AS9HC_Processing Method_061311_total
	STD5	Calibration Standard	05	1.00 PPM	5	25	Anions061411	AS9HC_Processing Method_061311_total
	STD6	Calibration Standard	06	2.0 PPM	6	25	Anions061411	AS9HC_Processing Method_061311_total
	STD7	Calibration Standard	07	5.0 PPM	7	25	Anions061411	AS9HC_Processing Method_061311_total
	STD8	Calibration Standard	08	10.0 PPM	8	25	Anions061411	AS9HC_Processing Method_061311_total
	STD9	Calibration Standard	09	25.0 PPM	9	25	Anions061411	AS9HC_Processing Method_061311_total
	STD10	Calibration Standard	10	40.0 PPM	10	25	Anions061411_Shutdow	AS9HC_Processing Method_061311_total

Sequence: ANIONCALSEQ-102818A
Last Update Operator: IonChrome

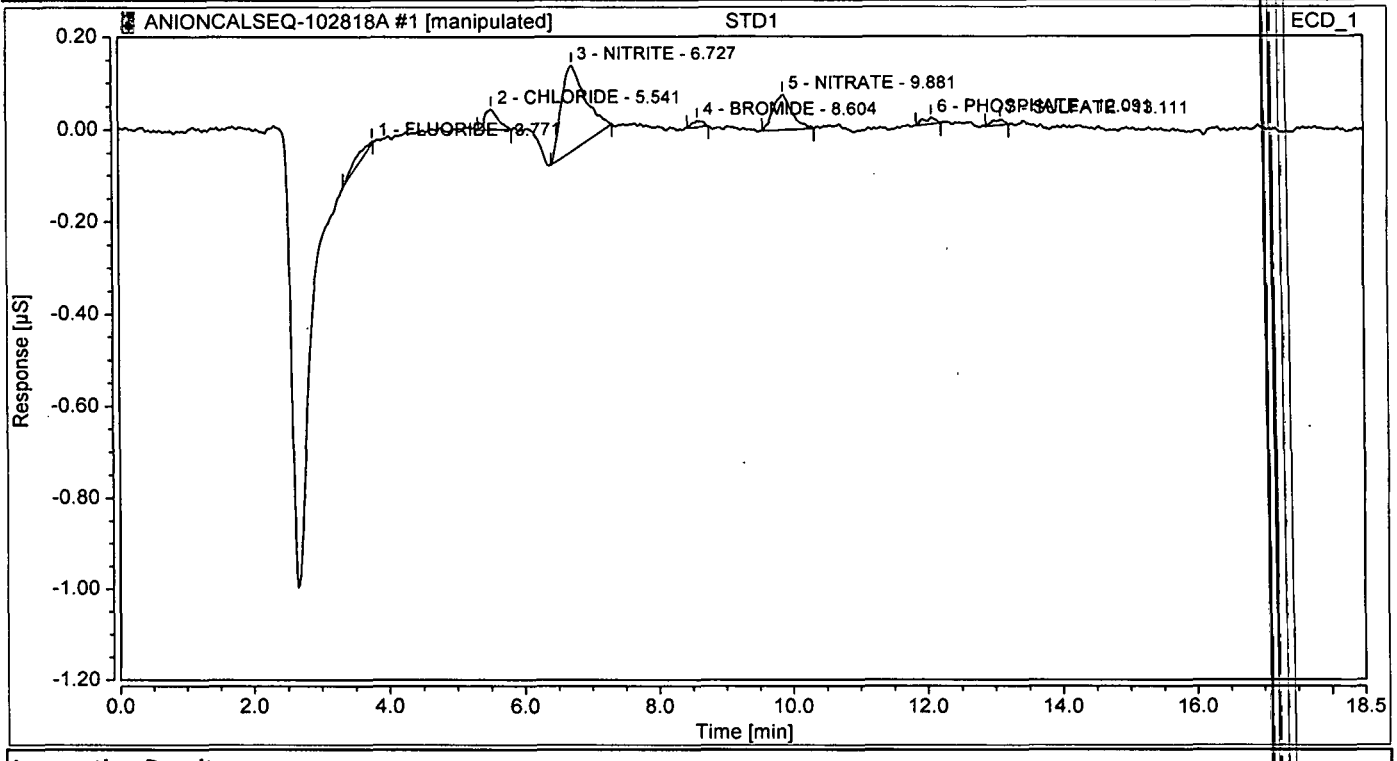
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Finished	10/28/2018 10:46:19 AM -04:00	1.0000	1.0000	1.0000		
Finished	10/28/2018 11:06:35 AM -04:00	1.0000	1.0000	1.0000		
Finished	10/28/2018 11:26:51 AM -04:00	1.0000	1.0000	1.0000		
Finished	10/28/2018 11:47:07 AM -04:00	1.0000	1.0000	1.0000		
Finished	10/28/2018 12:07:23 PM -04:00	1.0000	1.0000	1.0000		
Finished	10/28/2018 12:27:40 PM -04:00	1.0000	1.0000	1.0000		
Finished	10/28/2018 12:47:56 PM -04:00	1.0000	1.0000	1.0000		
Finished	10/28/2018 1:08:11 PM -04:00	1.0000	1.0000	1.0000		
Finished	10/28/2018 1:28:28 PM -04:00	1.0000	1.0000	1.0000		

Chromatogram and Results

Injection Details

Injection Name:	**STD1**	*Run Time (min):*	**18.50**
Vial Number:	**1**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**01**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

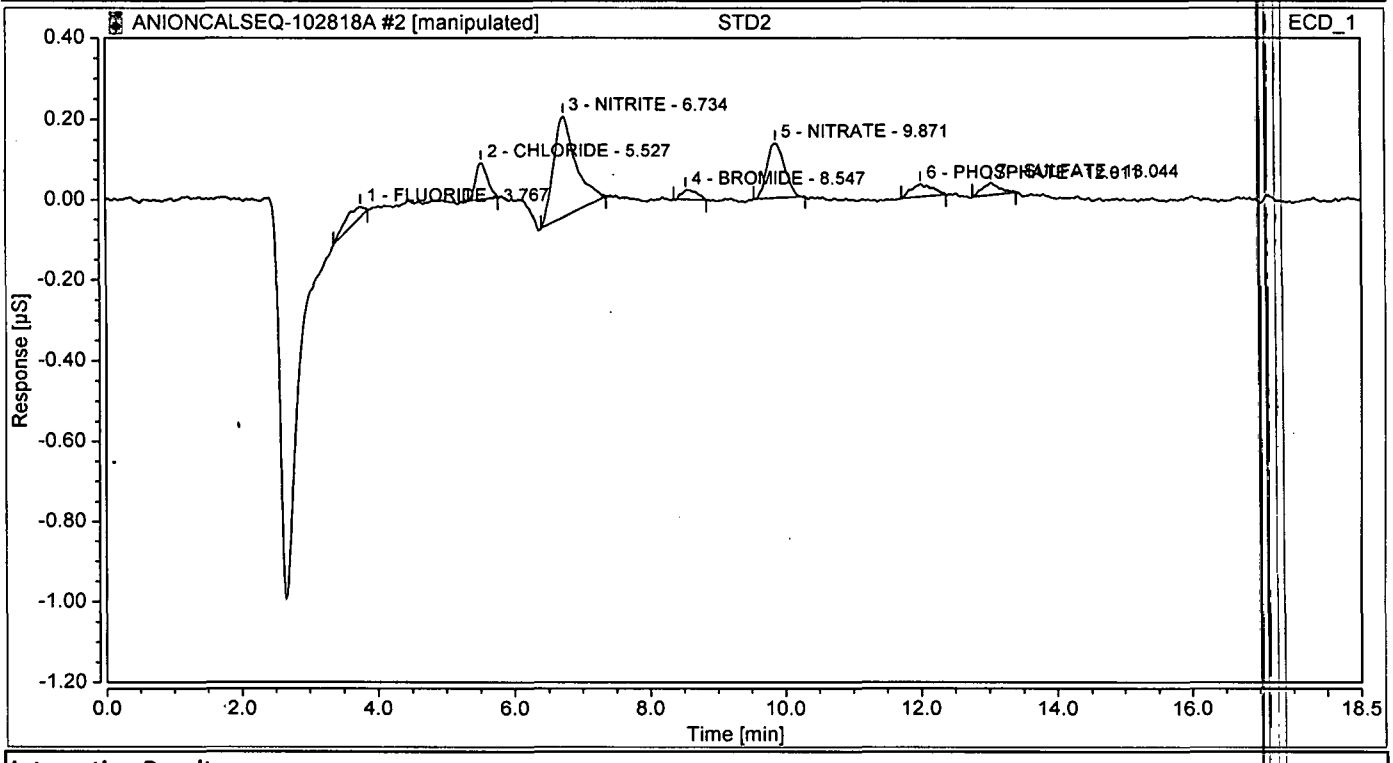
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.771	0.006	0.003	4.41	0.96	0.0548
2	CHLORIDE	5.541	0.010	0.045	8.20	12.96	0.0538
3	NITRITE	6.727	0.077	0.185	61.36	52.84	0.0583
4	BROMIDE	8.604	0.003	0.014	2.01	4.04	0.0473
5	NITRATE	9.881	0.025	0.076	19.63	21.76	0.0571
6	PHOSPHATE	12.091	0.003	0.014	2.34	3.95	0.0433
7	SULFATE	13.111	0.003	0.012	2.05	3.49	0.0485
Total:			**0.126**	**0.350**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2**	*Run Time (min):*	**18.50**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**02**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 10:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

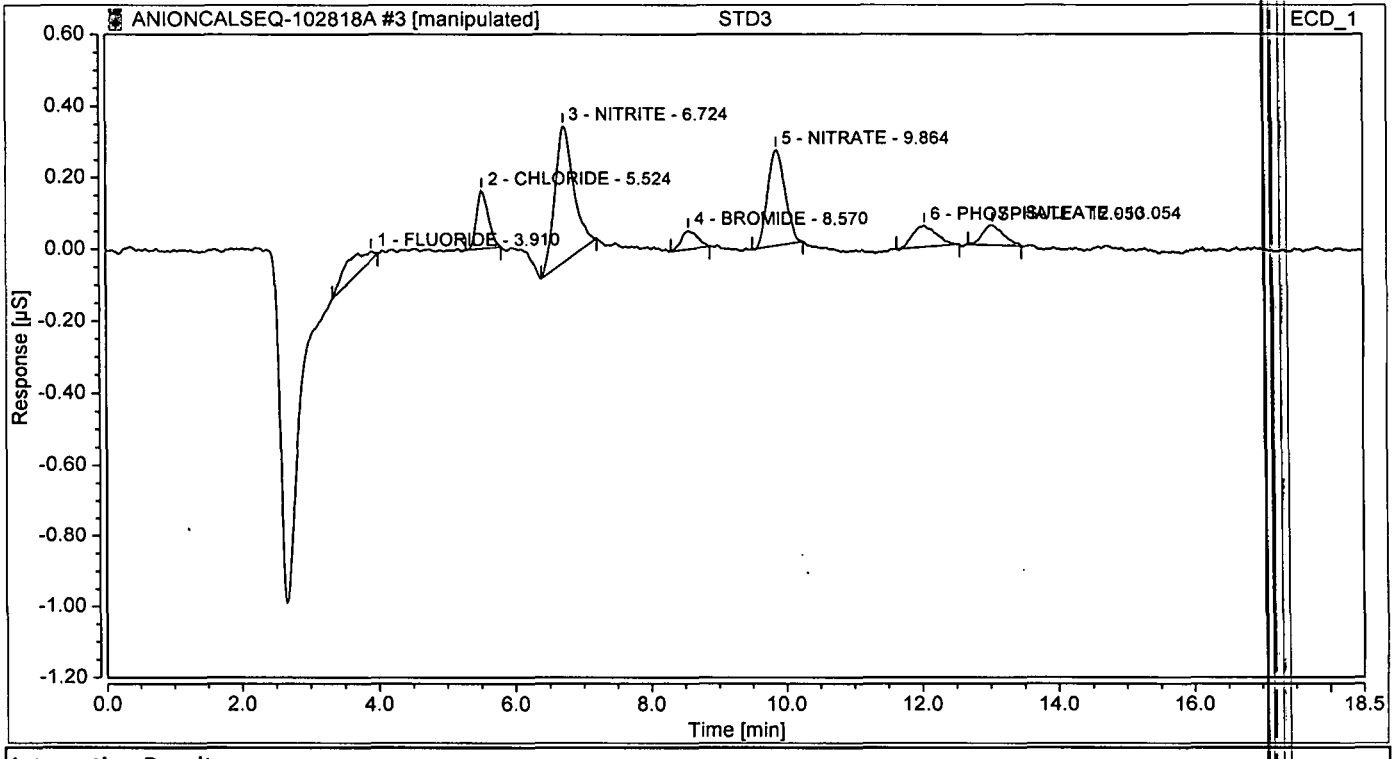
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.767	0.011	0.026	5.76	4.35	0.0960
2	CHLORIDE	5.527	0.018	0.092	9.44	15.52	0.1010
3	NITRITE	6.734	0.096	0.252	49.78	42.56	0.1087
4	BROMIDE	8.547	0.006	0.024	3.36	3.97	0.1027
5	NITRATE	9.871	0.041	0.137	21.29	23.11	0.0957
6	PHOSPHATE	12.011	0.011	0.032	5.85	5.35	0.1093
7	SULFATE	13.044	0.009	0.030	4.52	5.13	0.1002
Total:			**0.192**	**0.592**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3**	*Run Time (min):*	**18.50**
Vial Number:	**3**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**03**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

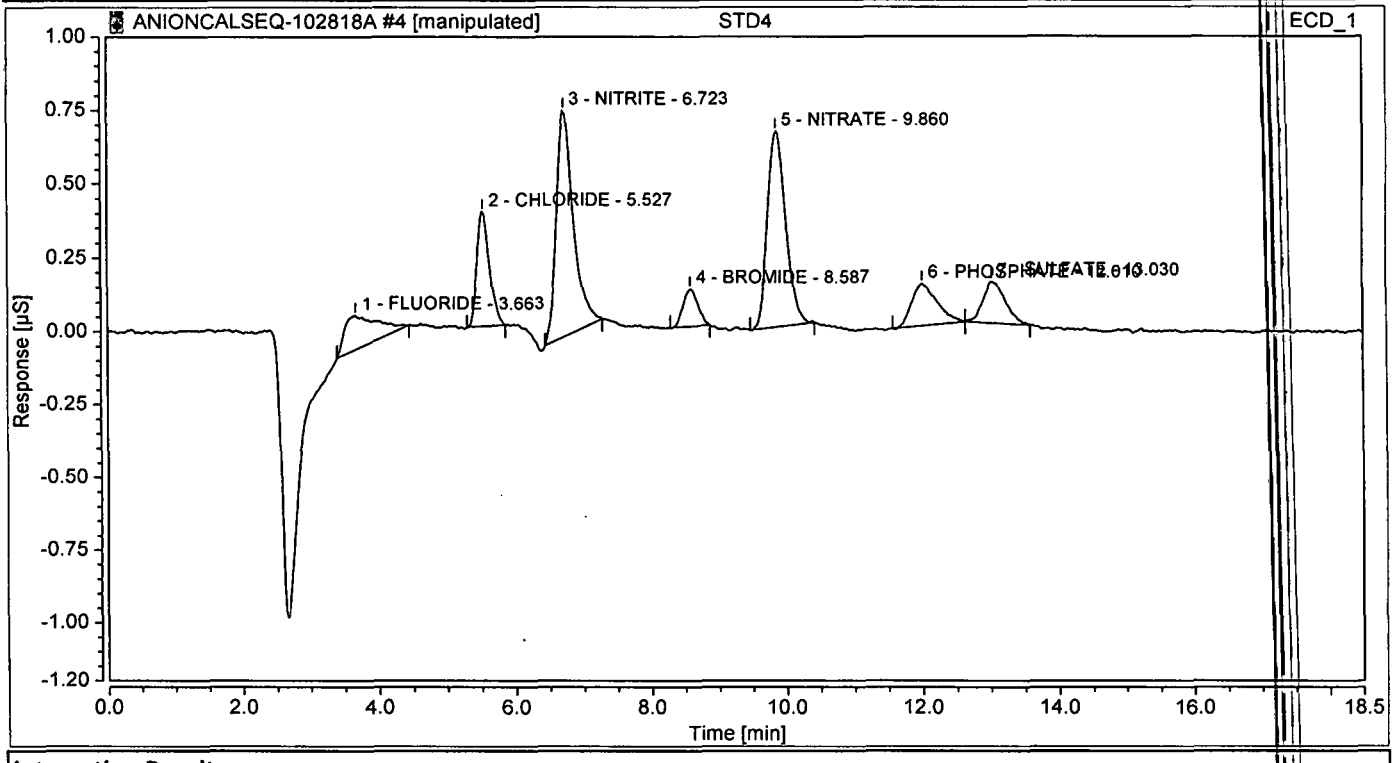
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.910	0.024	0.024	7.54	2.36	0.1913
2	CHLORIDE	5.524	0.032	0.162	10.25	16.08	0.1873
3	NITRITE	6.724	0.121	0.383	38.32	37.98	0.1788
4	BROMIDE	8.570	0.015	0.052	4.65	5.20	0.2194
5	NITRATE	9.864	0.080	0.270	25.25	26.79	0.1882
6	PHOSPHATE	12.050	0.024	0.060	7.66	5.97	0.2126
7	SULFATE	13.054	0.020	0.057	6.33	5.62	0.1962
Total:			**0.316**	**1.008**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4**	*Run Time (min):*	**18.50**
Vial Number:	**4**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**04**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

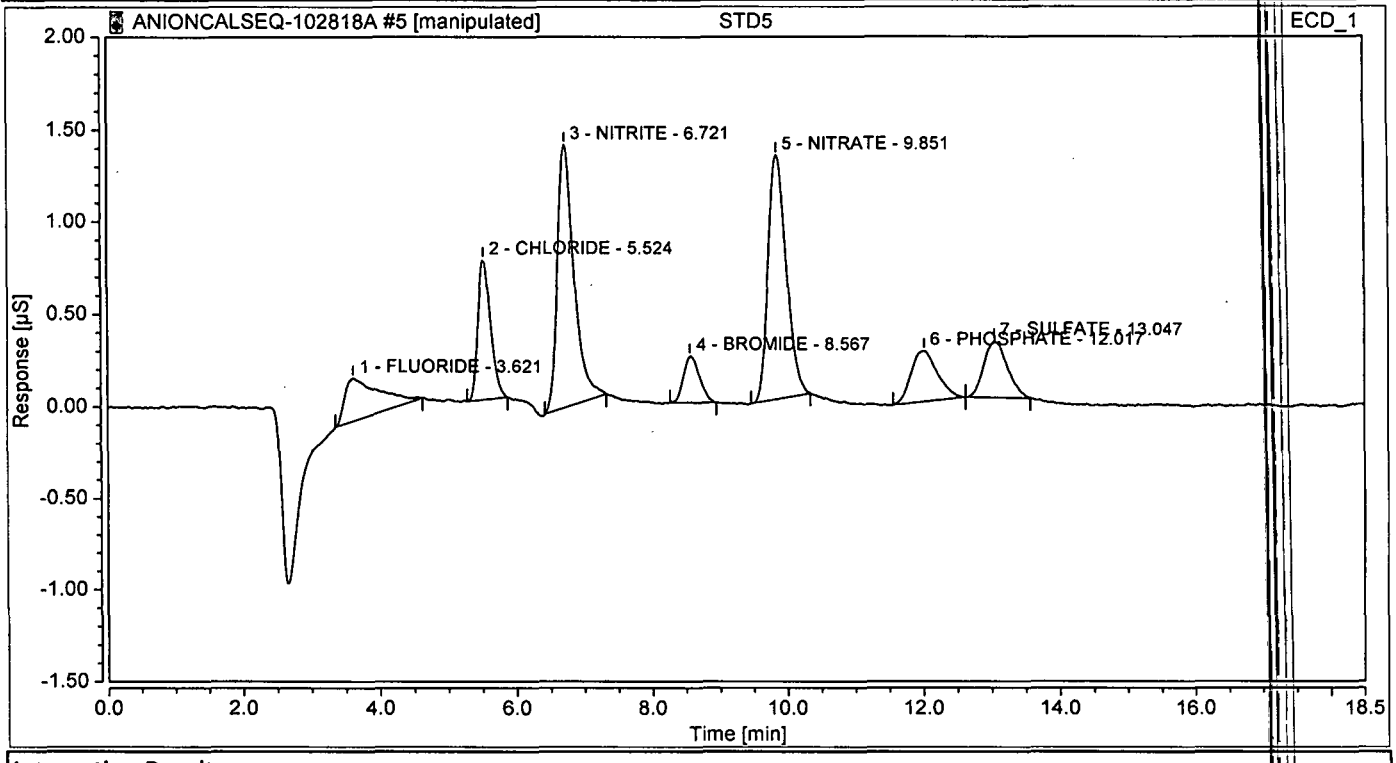
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.663	0.062	0.118	8.61	5.01	0.4780
2	CHLORIDE	5.527	0.083	0.387	11.48	16.52	0.4927
3	NITRITE	6.723	0.223	0.766	30.82	32.69	0.4574
4	BROMIDE	8.587	0.032	0.126	4.42	5.37	0.4636
5	NITRATE	9.860	0.208	0.663	28.73	28.28	0.4914
6	PHOSPHATE	12.010	0.061	0.143	8.49	6.08	0.5076
7	SULFATE	13.030	0.054	0.142	7.44	6.05	0.4822
Total:			**0.724**	**2.345**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5**	*Run Time (min):*	**18.50**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**05**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 11:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

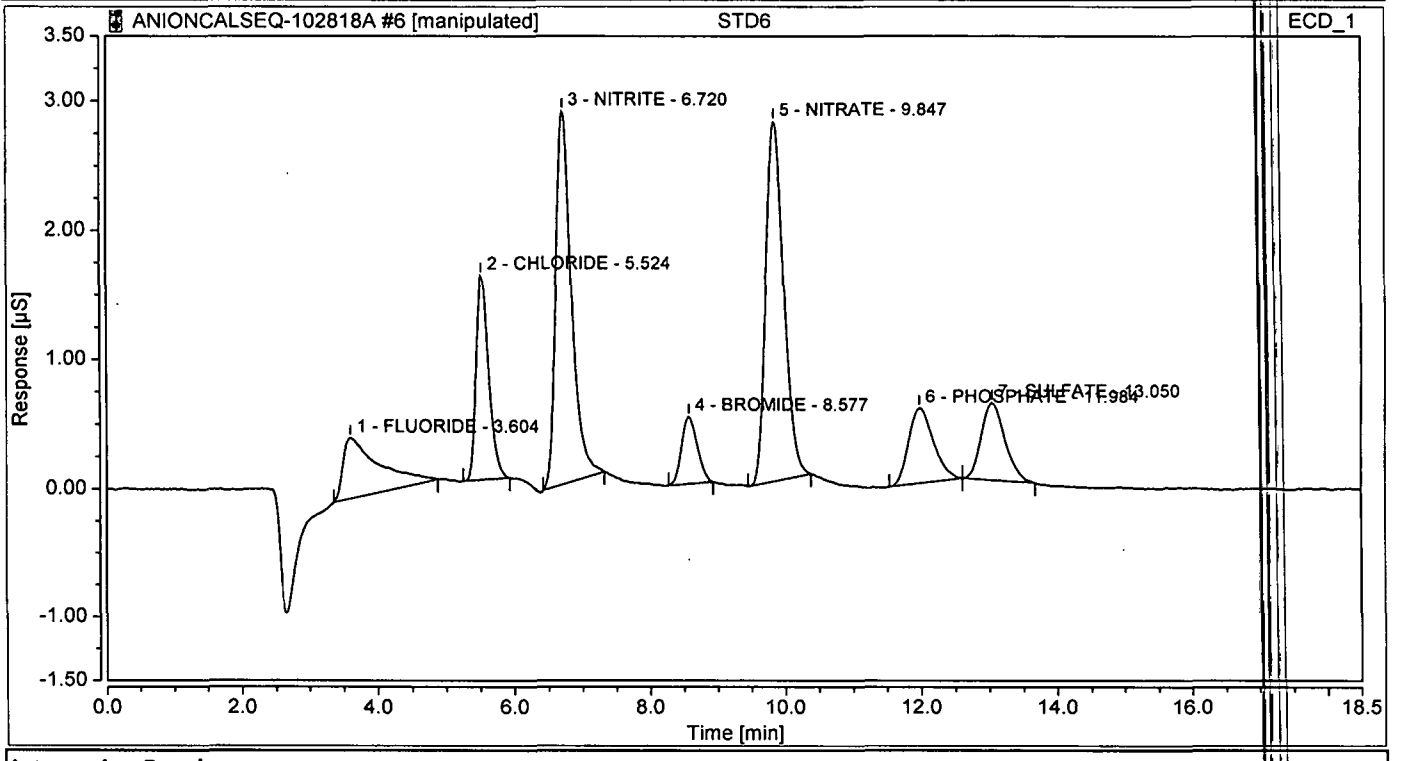
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.621	0.131	0.233	9.17	5.09	0.9861
2	CHLORIDE	5.524	0.163	0.757	11.44	16.55	0.9724
3	NITRITE	6.721	0.403	1.426	28.28	31.18	0.9491
4	BROMIDE	8.567	0.070	0.252	4.88	5.51	0.9931
5	NITRATE	9.851	0.413	1.325	29.00	28.98	0.9739
6	PHOSPHATE	12.017	0.124	0.275	8.66	6.02	0.9964
7	SULFATE	13.047	0.122	0.305	8.57	6.66	1.0578
Total:			**1.426**	**4.573**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6**	*Run Time (min):*	**18.50**
Vial Number:	**6**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

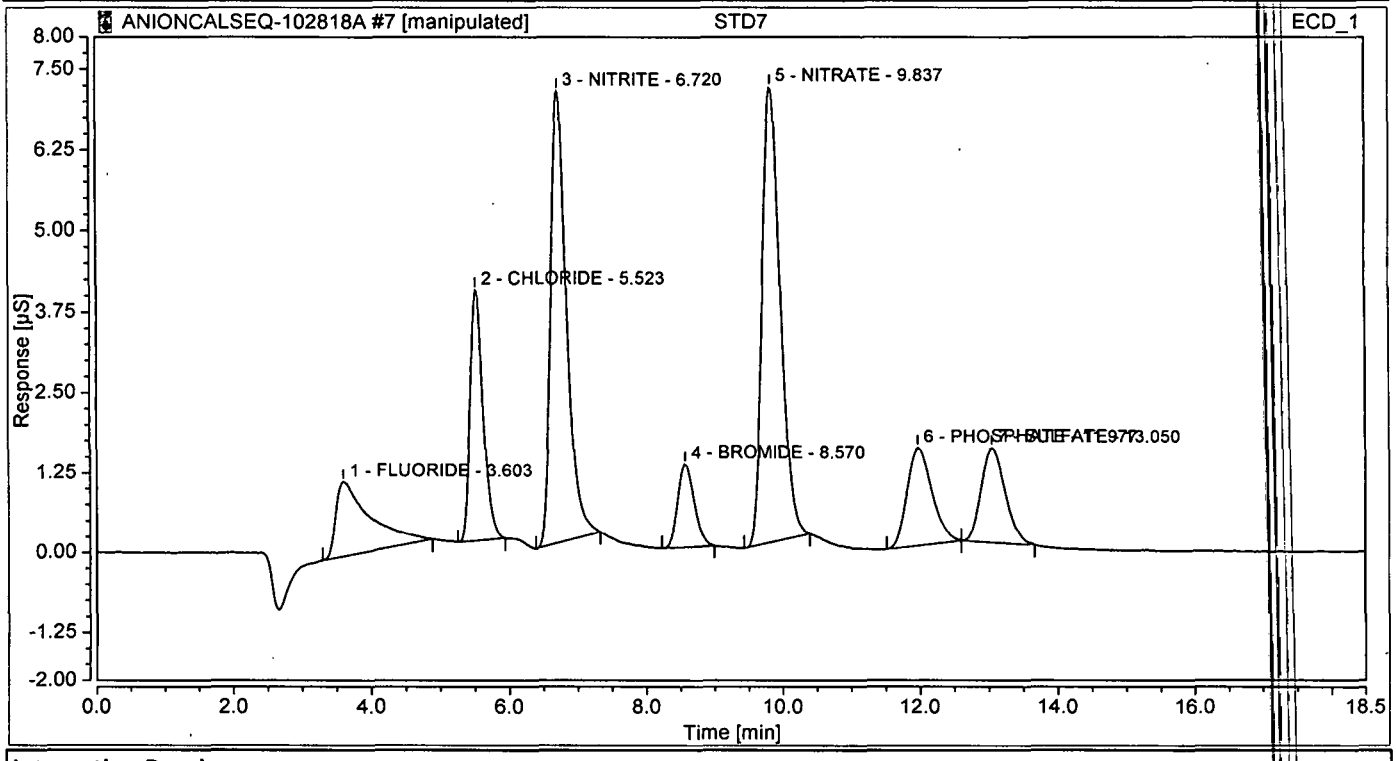
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.604	0.283	0.471	9.82	5.01	2.1100
2	CHLORIDE	5.524	0.340	1.582	11.81	16.81	2.0233
3	NITRITE	6.720	0.776	2.886	26.96	30.66	1.9631
4	BROMIDE	8.577	0.140	0.518	4.86	5.51	1.9779
5	NITRATE	9.847	0.856	2.780	29.72	29.54	1.9985
6	PHOSPHATE	11.984	0.244	0.578	8.48	6.14	1.9374
7	SULFATE	13.050	0.241	0.597	8.35	6.34	2.0513
Total:			**2.880**	**9.412**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD7**	*Run Time (min):*	**18.50**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**07**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

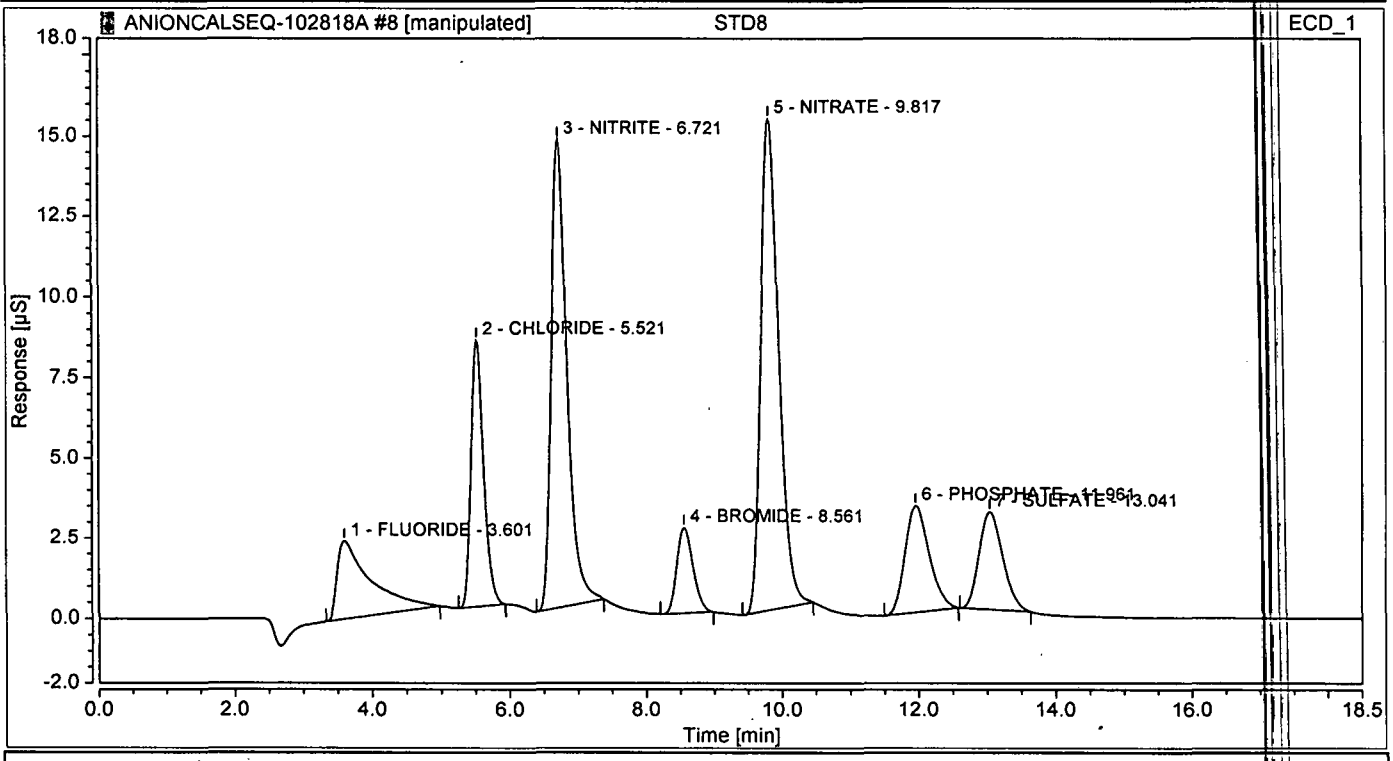
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.603	0.674	1.169	9.34	4.98	4.9728
2	CHLORIDE	5.523	0.859	3.903	11.90	16.63	5.0336
3	NITRITE	6.720	1.887	7.005	26.15	29.85	4.9487
4	BROMIDE	8.570	0.365	1.305	5.06	5.56	5.1011
5	NITRATE	9.837	2.188	7.064	30.32	30.10	4.9729
6	PHOSPHATE	11.977	0.644	1.537	8.92	6.55	4.9599
7	SULFATE	13.050	0.600	1.484	8.31	6.32	5.0323
Total:			**7.218**	**23.467**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD8**	*Run Time (min):*	**18.50**
Vial Number:	**8**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**08**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

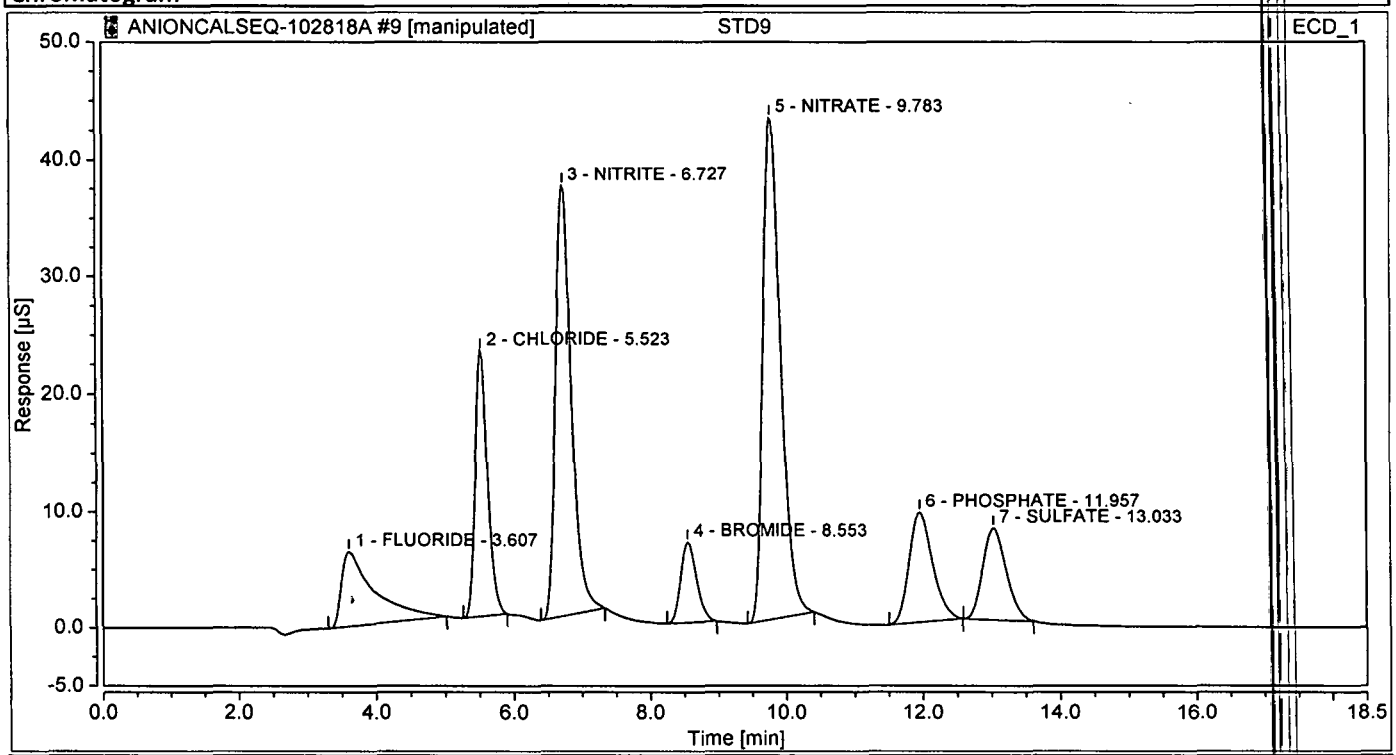
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.601	1.369	2.417	9.16	4.87	9.9399
2	CHLORIDE	5.521	1.762	8.295	11.79	16.73	10.0465
3	NITRITE	6.721	3.863	14.565	25.84	29.37	10.1374
4	BROMIDE	8.561	0.732	2.664	4.90	5.37	10.0620
5	NITRATE	9.817	4.654	15.286	31.13	30.83	10.1043
6	PHOSPHATE	11.961	1.357	3.320	9.08	6.70	10.0479
7	SULFATE	13.041	1.212	3.039	8.11	6.13	9.9984
Total:			**14.949**	**49.587**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD9**	*Run Time (min):*	**18.50**
Vial Number:	**9**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**09**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

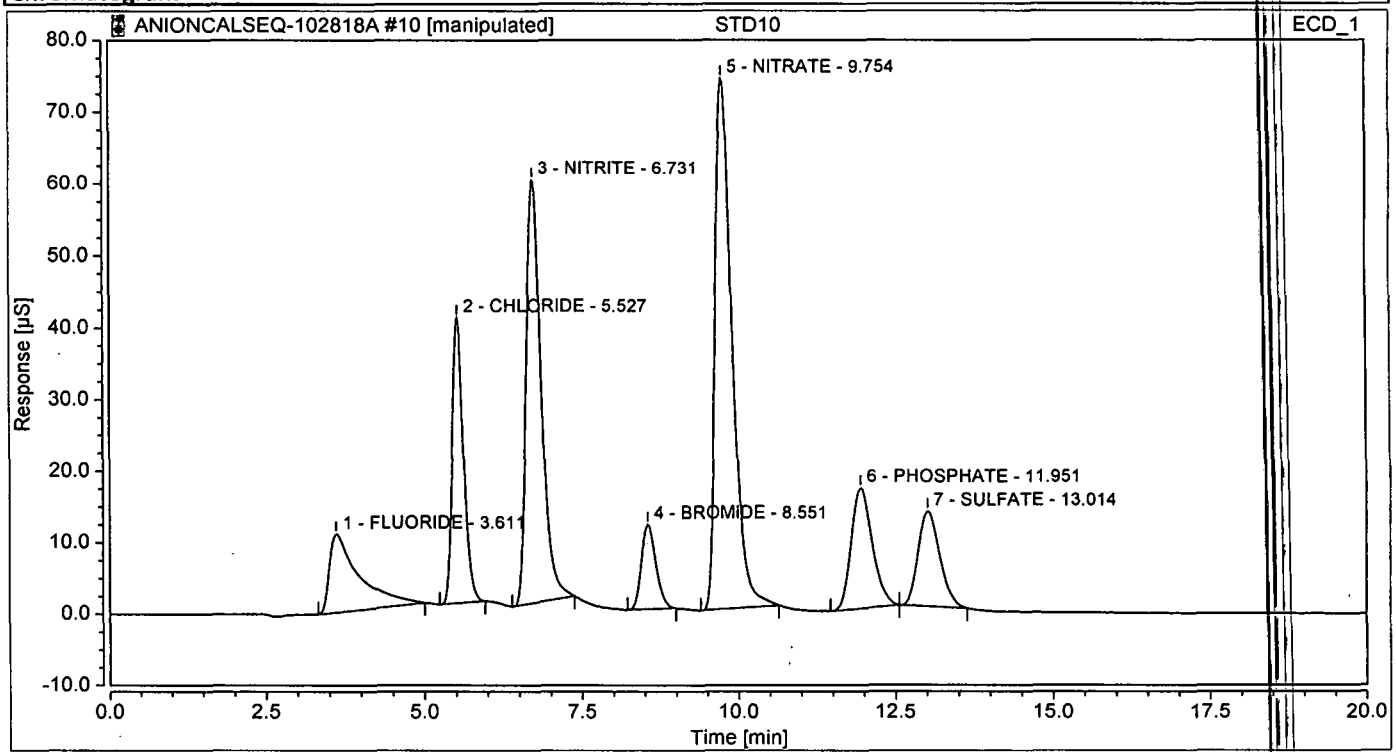
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.607	3.595	6.446	8.99	4.85	25.0223
2	CHLORIDE	5.523	4.730	22.662	11.83	17.04	24.8960
3	NITRITE	6.727	9.901	36.759	24.77	27.64	25.1602
4	BROMIDE	8.553	1.879	6.934	4.70	5.21	24.7773
5	NITRATE	9.783	12.985	42.835	32.48	32.21	24.9598
6	PHOSPHATE	11.957	3.758	9.461	9.40	7.11	25.0738
7	SULFATE	13.033	3.131	7.892	7.83	5.93	24.7416
Total:			**39.978**	**132.990**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

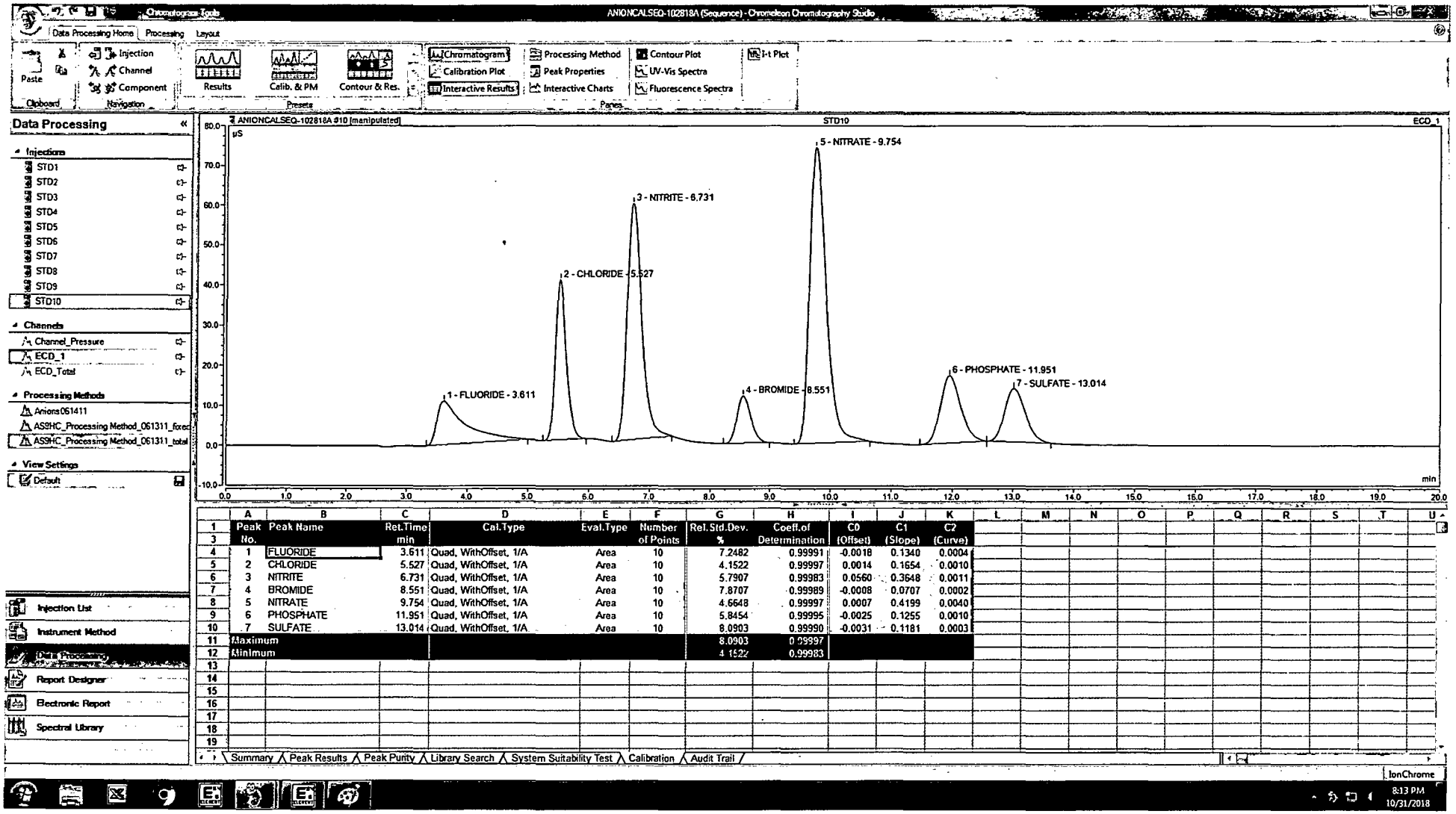
Injection Name:	**STD10**	*Run Time (min):*	**20.00**
Vial Number:	**10**	*Injection Volume:*	**25.00**
Injection Type:	**Calibration Standard**	*Channel:*	**ECD_1**
Calibration Level:	**10**	*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_Shutdown**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_total**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/28/2018 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount
1	FLUORIDE	3.611	5.979	10.951	8.70	4.85	39.9988
2	CHLORIDE	5.527	8.207	39.906	11.94	17.67	40.0450
3	NITRITE	6.731	16.281	58.997	23.69	26.12	39.8857
4	BROMIDE	8.551	3.169	11.833	4.61	5.24	40.1066
5	NITRATE	9.754	23.232	73.991	33.80	32.76	40.0060
6	PHOSPHATE	11.951	6.570	16.881	9.56	7.47	39.9572
7	SULFATE	13.014	5.296	13.302	7.71	5.89	40.1437
Total:			**68.734**	**225.860**	**100.00**	**100.00**	



	A	B	C	D	E	F	G	H	I	J	K
1	Peak No.	Peak Name	Ret.Time min	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
4	1	FLUORIDE	3.611	Quad, WithOffset, 1/A	Area	10	7.2482	0.99991	-0.0018	0.1340	0.0004
5	2	CHLORIDE	5.527	Quad, WithOffset, 1/A	Area	10	4.1522	0.99997	0.0014	0.1654	0.0010
6	3	NITRITE	6.731	Quad, WithOffset, 1/A	Area	10	5.7907	0.99983	0.0560	0.3648	0.0011
7	4	BROMIDE	8.551	Quad, WithOffset, 1/A	Area	10	7.8707	0.99989	-0.0008	0.0707	0.0002
8	5	NITRATE	9.754	Quad, WithOffset, 1/A	Area	10	4.6648	0.99997	0.0007	0.4199	0.0040
9	6	PHOSPHATE	11.951	Quad, WithOffset, 1/A	Area	10	5.8454	0.99995	-0.0025	0.1255	0.0010
10	7	SULFATE	13.014	Quad, WithOffset, 1/A	Area	10	8.0903	0.99990	-0.0031	0.1181	0.0003
11	Maximum						8.0903	0.99997			
12	Minimum						4.1522	0.99983			

Title: NEW SEQ 122116
Datasource: TECH-C63F7B5413_local
Location: TECH-C63F7B5413_1\2_Data\IC2-2018-A
Timebase: TECH-C63F7B5413_1
#Samples: 75
Created: 10/28/2018 8:27:20 AM by Administrator
Last Update: 10/30/2018 11:48:03 AM by Administrator

No.	Name	Sample ID	Type	Dil. Factor	Pos.	Inj. Vol.	Program
1	STD1	0.05 PPM	Standard	1.0000	1	25.0	ICS 1500 Anions Program 042916
2	STD2	0.10 PPM	Standard	1.0000	2	25.0	ICS 1500 Anions Program 042916
3	STD3	0.20 PPM	Standard	1.0000	3	25.0	ICS 1500 Anions Program 042916
4	STD4	0.50 PPM	Standard	1.0000	4	25.0	ICS 1500 Anions Program 042916
5	STD5	1.0 PPM	Standard	1.0000	5	25.0	ICS 1500 Anions Program 042916
6	STD6	2.0 PPM	Standard	1.0000	6	25.0	ICS 1500 Anions Program 042916
7	STD7	5.0 PPM	Standard	1.0000	7	25.0	ICS 1500 Anions Program 042916
8	STD8	10.0 PPM	Standard	1.0000	8	25.0	ICS 1500 Anions Program 042916
9	STD9	25.0 PPM	Standard	1.0000	9	25.0	ICS 1500 Anions Program 042916
10	STD10	40.0 PPM	Standard	1.0000	10	25.0	ICS 1500 Anions Program 042916
11	ICV (Y18A025)	ICV 10 PPM	Unknown	1.0000	11	25.0	ICS 1500 Anions Program 042916
12	CCV-1		Unknown	1.0000	1	25.0	ICS 1500 Anions Program 042916
13	BLK1		Unknown	1.0000	4	25.0	ICS 1500 Anions Program 042916
14	CCV-1		Unknown	1.0000	2	25.0	ICS 1500 Anions Program 042916
15	CCV-1		Unknown	1.0000	3	25.0	ICS 1500 Anions Program 042916
16	BJ81320-BLK1		Unknown	1.0000	4	25.0	ICS 1500 Anions Program 042916
17	BJ81320-BS1	LCS 10 PPM	Unknown	1.0000	7	25.0	ICS 1500 Anions Program 042916
18			Unknown	1.0000	8	25.0	ICS 1500 Anions Program 042916
19	BJ81320-DUP1		Unknown	1.0000	8	25.0	ICS 1500 Anions Program 042916
20	BJ81320-MS1	@ 10 PPM	Unknown	1.0000	9	25.0	ICS 1500 Anions Program 042916
21			Unknown	1.0000	10	25.0	ICS 1500 Anions Program 042916
22			Unknown	1.0000	11	25.0	ICS 1500 Anions Program 042916
23			Unknown	1.0000	12	25.0	ICS 1500 Anions Program 042916
24			Unknown	1.0000	13	25.0	ICS 1500 Anions Program 042916
25			Unknown	1.0000	14	25.0	ICS 1500 Anions Program 042916
26	CCV-2	10 PPM	Unknown	1.0000	1	25.0	ICS 1500 Anions Program 042916
27	CCB-2		Unknown	1.0000	4	25.0	ICS 1500 Anions Program 042916
28			Unknown	1.0000	15	25.0	ICS 1500 Anions Program 042916
29			Unknown	1.0000	16	25.0	ICS 1500 Anions Program 042916
30			Unknown	1.0000	17	25.0	ICS 1500 Anions Program 042916
31			Unknown	1.0000	18	25.0	ICS 1500 Anions Program 042916
32			Unknown	1.0000	19	25.0	ICS 1500 Anions Program 042916
33			Unknown	1.0000	20	25.0	ICS 1500 Anions Program 042916
34			Unknown	1.0000	21	25.0	ICS 1500 Anions Program 042916
35			Unknown	1.0000	22	25.0	ICS 1500 Anions Program 042916
36			Unknown	1.0000	23	25.0	ICS 1500 Anions Program 042916
37			Unknown	1.0000	24	25.0	ICS 1500 Anions Program 042916
38	CCV-3	10 PPM	Unknown	1.0000	1	25.0	ICS 1500 Anions Program 042916
39	CCB-3		Unknown	1.0000	4	25.0	ICS 1500 Anions Program 042916
40			Unknown	1.0000	25	25.0	ICS 1500 Anions Program 042916
41			Unknown	1.0000	26	25.0	ICS 1500 Anions Program 042916
42			Unknown	1.0000	27	25.0	ICS 1500 Anions Program 042916

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Title: NEW SEQ 122116
Datasource: TECH-C63F7B5413_local
Location: TECH-C63F7B5413_1\2_Data\IC2-2018-A
Timebase: TECH-C63F7B5413_1
#Samples: 75
Created: 10/28/2018 8:27:20 AM by Administrator
Last Update: 10/30/2018 11:48:03 AM by Administrator

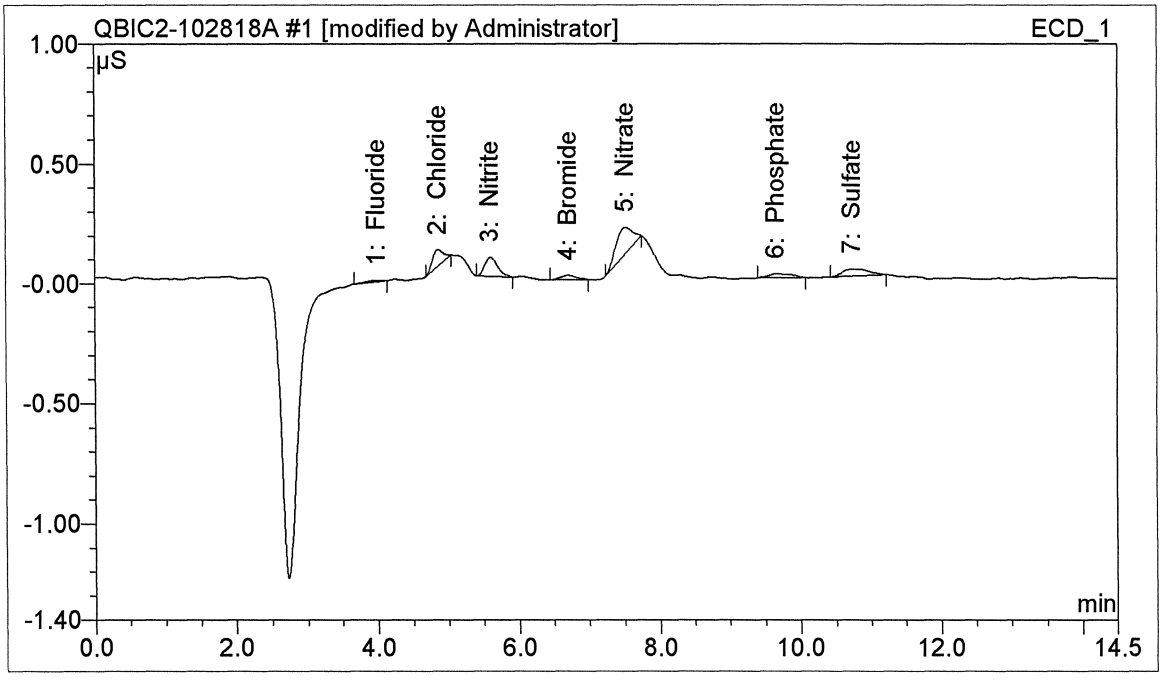
No.	Name	Method	Status	Inj. Date/Time	Weight	ISTD Amount
1	STD1	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 9:31:54 AM	1.0000	1.0000
2	STD2	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 9:51:19 AM	1.0000	1.0000
3	STD3	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 10:10:44 AM	1.0000	1.0000
4	STD4	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 10:30:09 AM	1.0000	1.0000
5	STD5	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 10:49:35 AM	1.0000	1.0000
6	STD6	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 11:09:00 AM	1.0000	1.0000
7	STD7	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 11:28:26 AM	1.0000	1.0000
8	STD8	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 11:47:51 AM	1.0000	1.0000
9	STD9	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 12:07:16 PM	1.0000	1.0000
10	STD10	Anions ICS1500 122016 TOTAL	Finished	10/28/2018 12:26:41 PM	1.0000	1.0000
11	ICV (Y18A025)	Anions ICS1500 122016 TOTAL	Finished	10/30/2018 11:53:23 AM	1.0000	1.0000
12	CCV-1	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
13	BLK1	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
14	CCV-1	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
15	CCV-1	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
16	BJ81320-BLK1	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
17	BJ81320-BS1	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
18		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
19	BJ81320-DUP1	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
20	BJ81320-MS1	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
21		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
22		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
23		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
24		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
25		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
26	CCV-2	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
27	CCB-2	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
28		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
29		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
30		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
31		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
32		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
33		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
34		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
35		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
36		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
37		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
38	CCV-3	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
39	CCB-3	Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
40		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
41		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000
42		Anions ICS1500 122016 TOTAL	Finished		1.0000	1.0000

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Sample Analysis Report

Sample Name:	STD1	**Sample No.:**	1
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 9:31 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

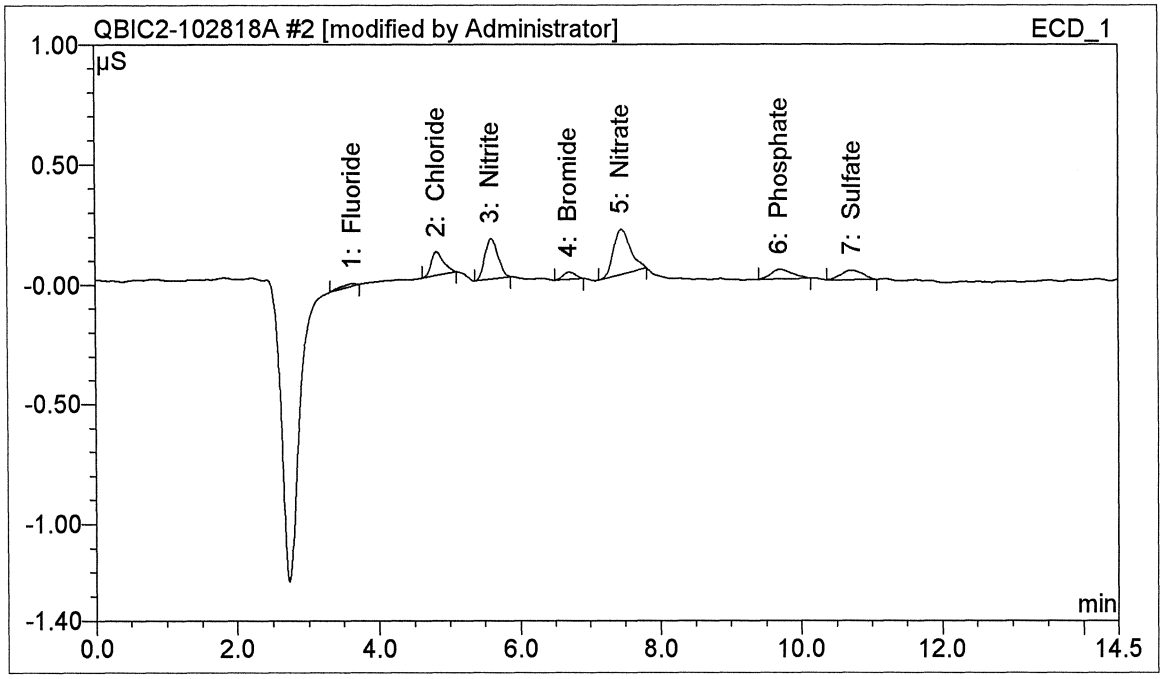
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.99	0.002	0.006	0.0734	18.70
2	Chloride	4.86	0.012	0.067	0.0473	12.05
3	Nitrite	5.60	0.017	0.079	0.0500	12.74
4	Bromide	6.70	0.004	0.018	0.0576	14.67
5	Nitrate	7.51	0.031	0.111	0.0530	13.51
6	Phosphate	9.65	0.006	0.016	0.0454	11.56
7	Sulfate	10.74	0.012	0.028	0.0658	16.77



Sample Analysis Report

Sample Name:	STD2	**Sample No.:**	2
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 9:51 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

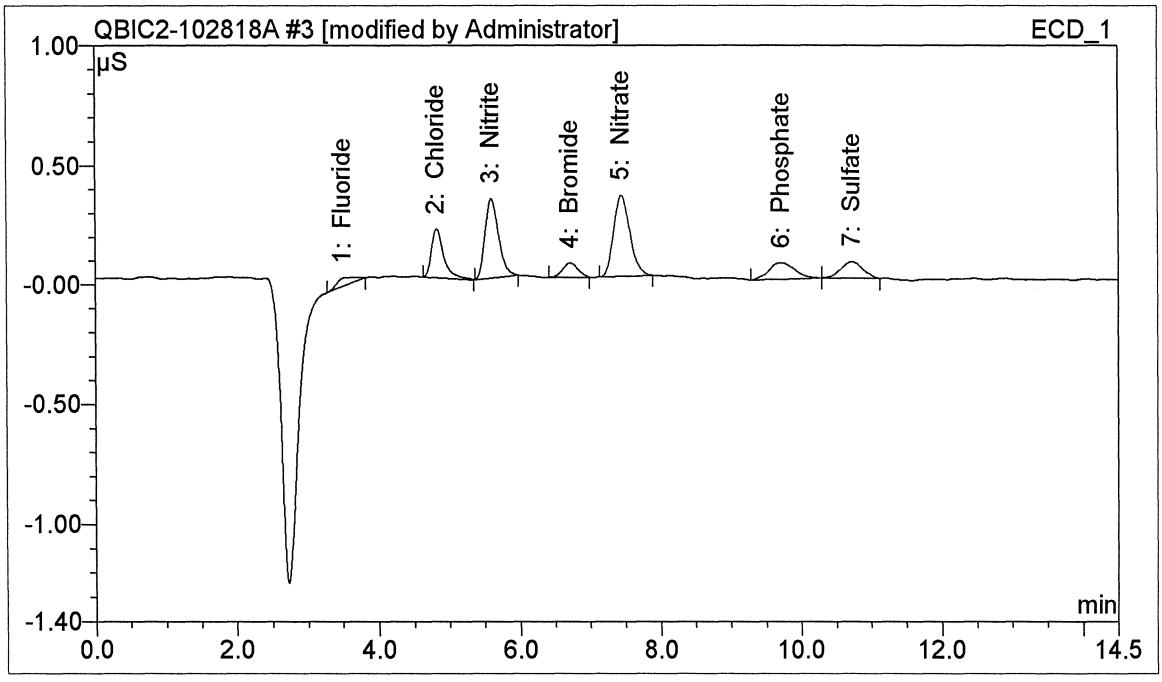
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.63	0.003	0.010	0.0862	13.41
2	Chloride	4.82	0.019	0.097	0.0920	14.30
3	Nitrite	5.60	0.036	0.167	0.1013	15.75
4	Bromide	6.71	0.006	0.029	0.0790	12.29
5	Nitrate	7.46	0.052	0.187	0.1024	15.93
6	Phosphate	9.69	0.014	0.040	0.1027	15.96
7	Sulfate	10.74	0.014	0.039	0.0795	12.36



Sample Analysis Report

Sample Name:	STD3	**Sample No.:**	3
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	########## 10:10 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

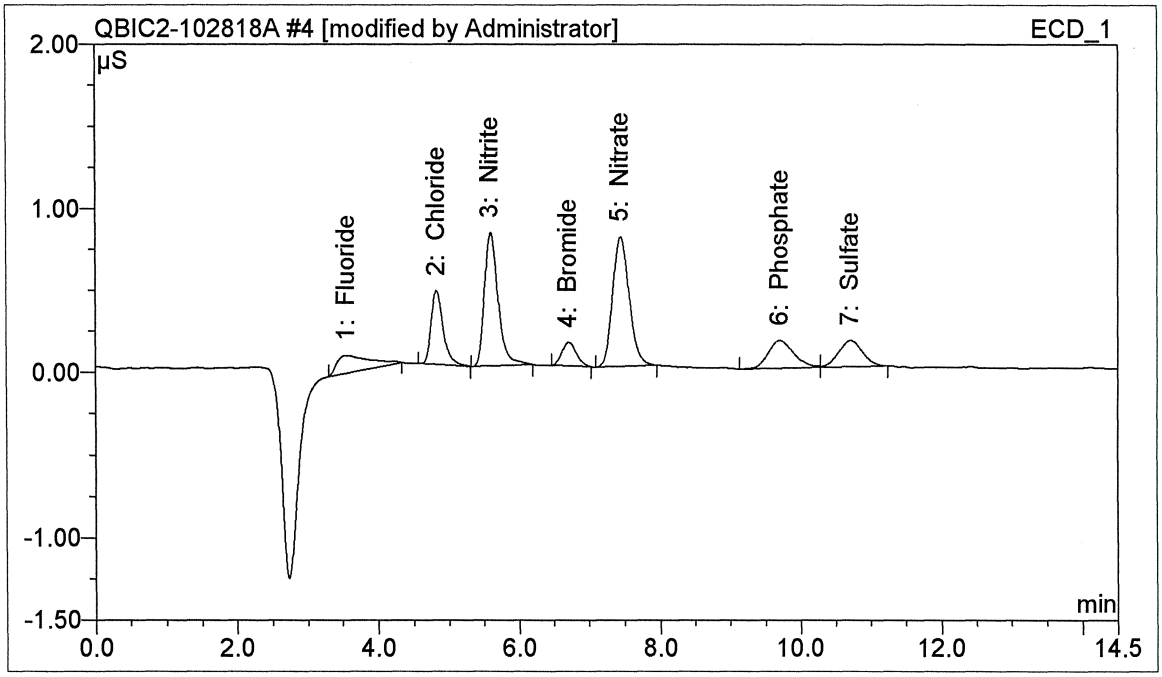
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.49	0.009	0.035	0.1312	9.66
2	Chloride	4.82	0.042	0.205	0.2238	16.47
3	Nitrite	5.60	0.075	0.335	0.2060	15.17
4	Bromide	6.71	0.015	0.060	0.2132	15.69
5	Nitrate	7.44	0.092	0.342	0.1945	14.32
6	Phosphate	9.71	0.029	0.069	0.2141	15.76
7	Sulfate	10.72	0.025	0.069	0.1756	12.93



Sample Analysis Report

Sample Name:	STD4	**Sample No.:**	4
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 10:30 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

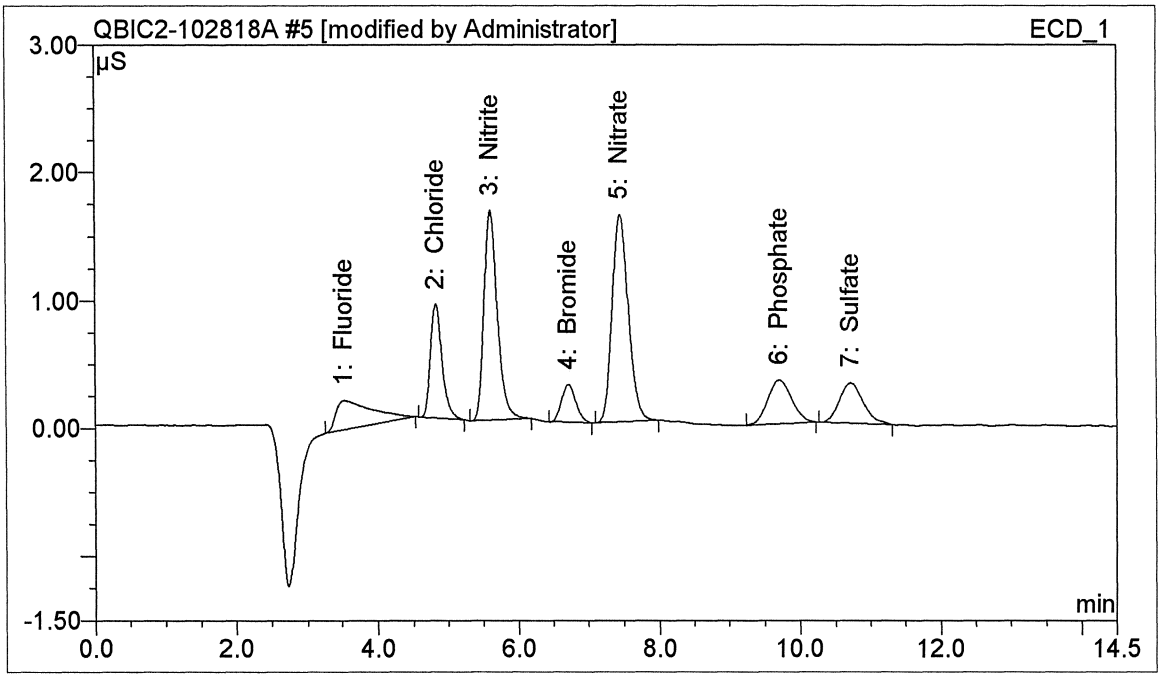
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.55	0.055	0.107	0.4770	13.78
2	Chloride	4.82	0.089	0.451	0.5049	14.58
3	Nitrite	5.60	0.185	0.814	0.5040	14.56
4	Bromide	6.71	0.034	0.142	0.4844	13.99
5	Nitrate	7.45	0.215	0.791	0.4822	13.93
6	Phosphate	9.70	0.071	0.169	0.5146	14.86
7	Sulfate	10.71	0.063	0.159	0.4956	14.31



Sample Analysis Report

Sample Name:	STD5	**Sample No.:**	5
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 10:49 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

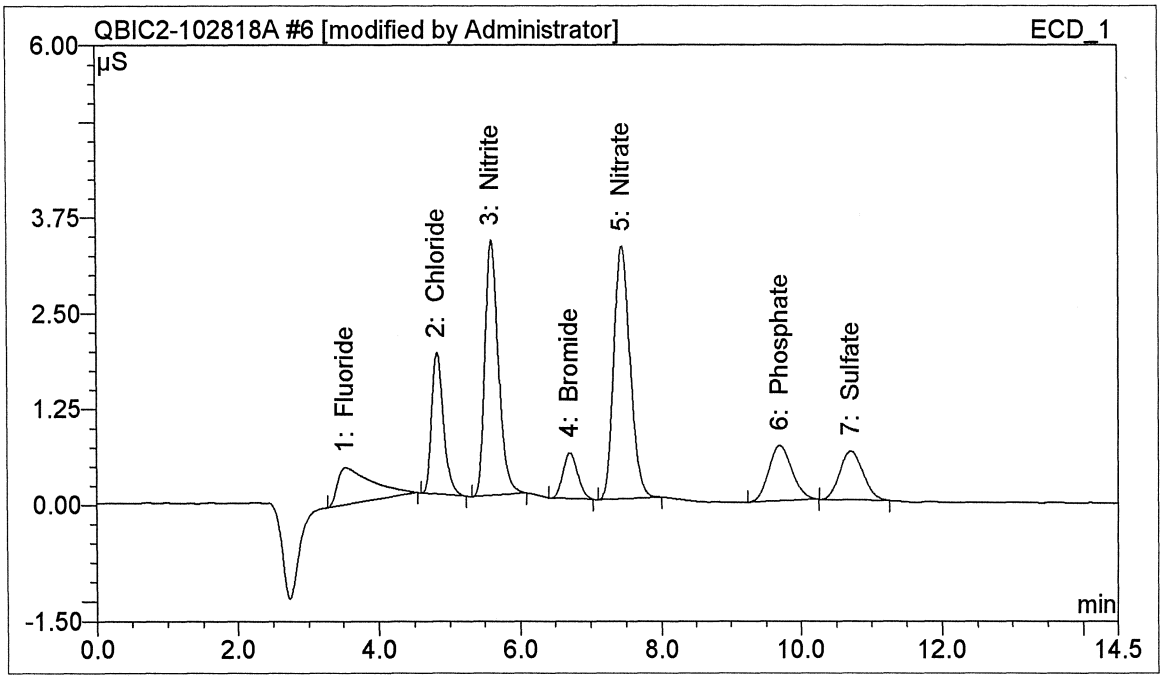
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.53	0.131	0.230	1.0411	14.88
2	Chloride	4.82	0.170	0.892	0.9832	14.05
3	Nitrite	5.60	0.365	1.637	0.9862	14.09
4	Bromide	6.71	0.069	0.294	1.0090	14.42
5	Nitrate	7.45	0.436	1.619	0.9919	14.17
6	Phosphate	9.70	0.132	0.341	0.9638	13.77
7	Sulfate	10.72	0.125	0.316	1.0221	14.61



Sample Analysis Report

Sample Name:	STD6	**Sample No.:**	6
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 11:09 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

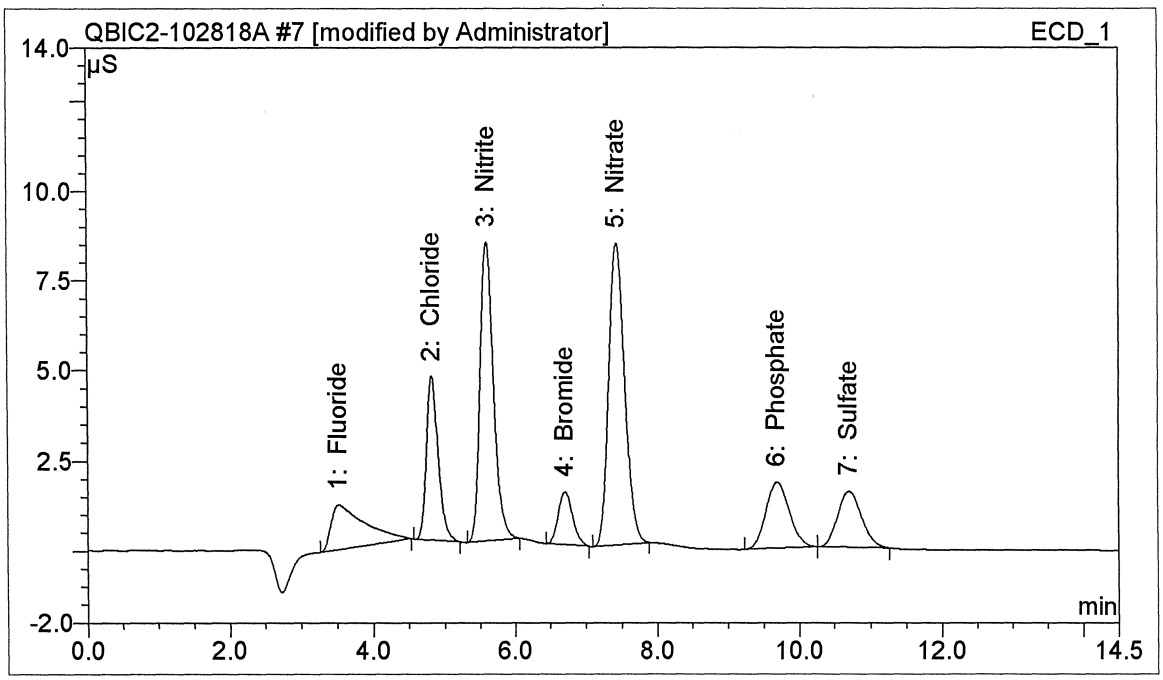
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.53	0.269	0.484	2.0621	14.57
2	Chloride	4.82	0.354	1.845	2.0636	14.58
3	Nitrite	5.60	0.735	3.327	1.9732	13.94
4	Bromide	6.70	0.140	0.592	2.0313	14.35
5	Nitrate	7.44	0.882	3.299	2.0081	14.18
6	Phosphate	9.69	0.278	0.720	2.0165	14.24
7	Sulfate	10.71	0.242	0.632	2.0020	14.14



Sample Analysis Report

Sample Name:	STD7	**Sample No.:**	7
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 11:28 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

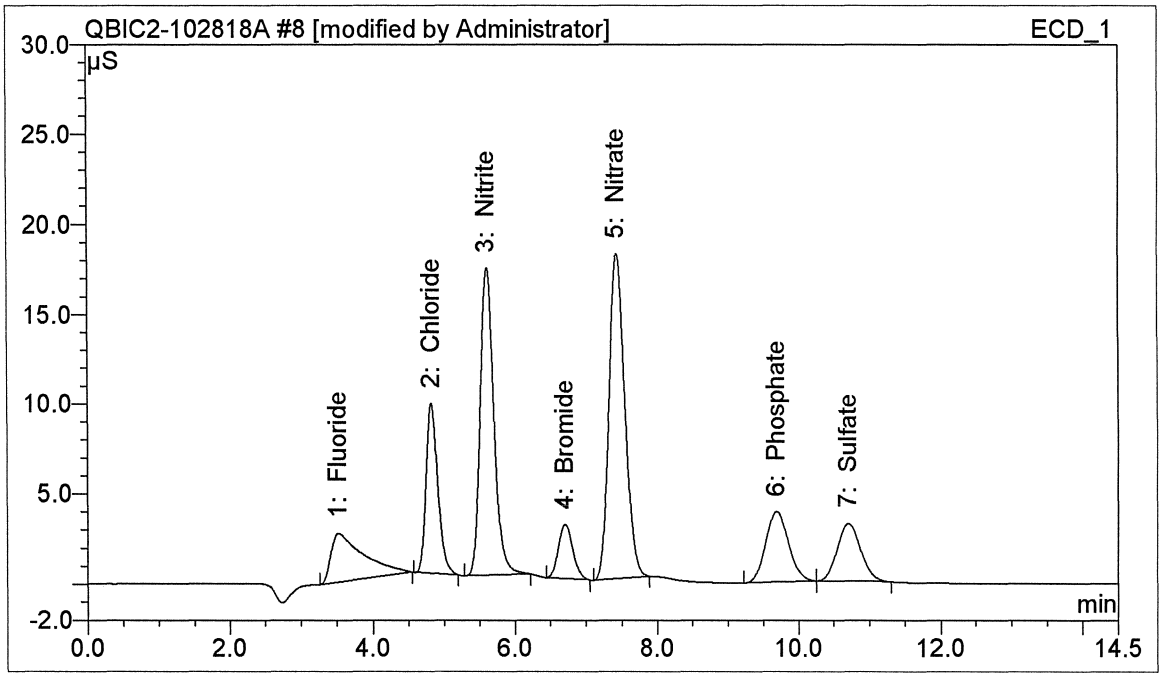
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.53	0.665	1.235	4.9208	14.24
2	Chloride	4.82	0.863	4.532	4.9776	14.40
3	Nitrite	5.60	1.821	8.294	4.8355	13.99
4	Bromide	6.71	0.346	1.467	4.9991	14.46
5	Nitrate	7.44	2.191	8.374	4.8970	14.17
6	Phosphate	9.69	0.698	1.835	4.9624	14.36
7	Sulfate	10.71	0.601	1.554	4.9679	14.37



Sample Analysis Report

Sample Name:	STD8	**Sample No.:**	8
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 11:47 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

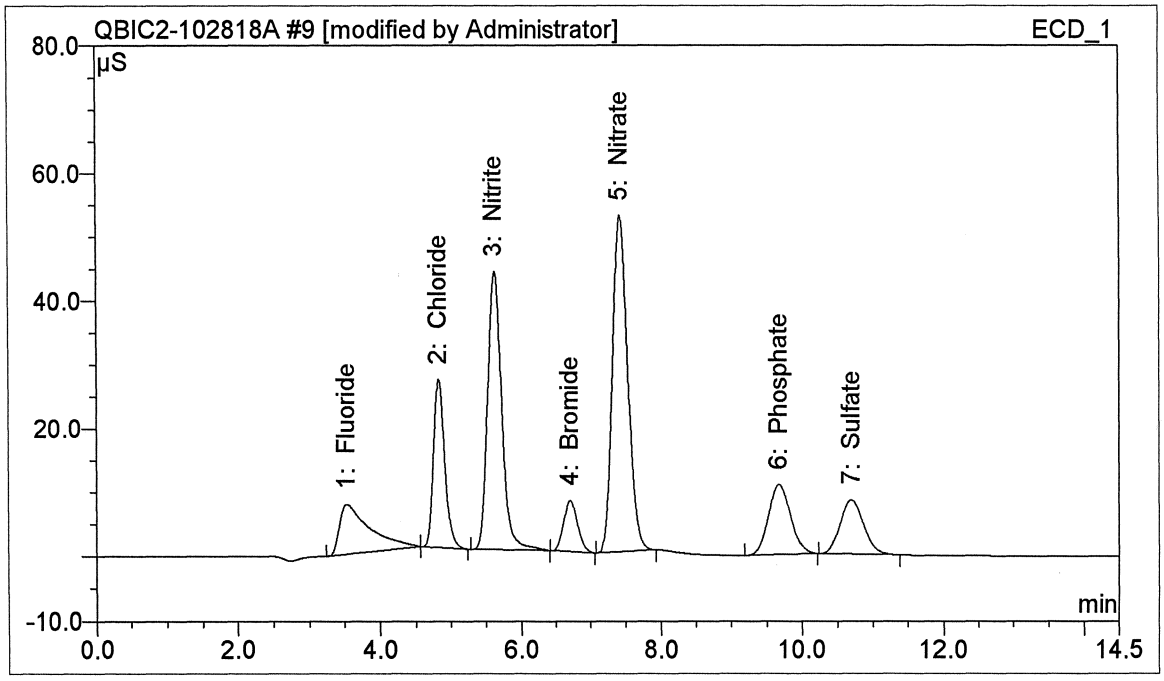
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.52	1.403	2.683	9.9965	14.32
2	Chloride	4.82	1.768	9.435	9.9345	14.23
3	Nitrite	5.61	3.815	17.096	9.9490	14.25
4	Bromide	6.70	0.702	2.984	9.9935	14.31
5	Nitrate	7.43	4.630	18.045	9.9455	14.24
6	Phosphate	9.68	1.449	3.873	9.9991	14.32
7	Sulfate	10.71	1.227	3.177	10.0058	14.33



Sample Analysis Report

Sample Name:	STD9	**Sample No.:**	9
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 12:07 PM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

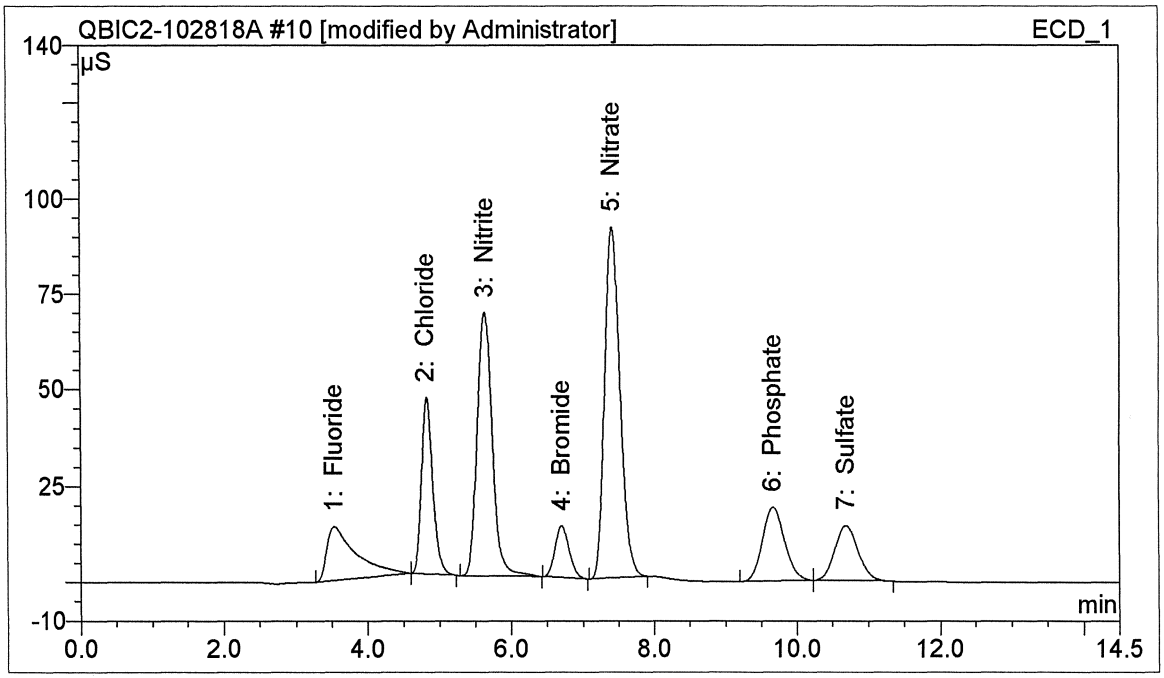
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.53	3.862	7.808	25.1157	14.27
2	Chloride	4.83	4.830	26.316	25.0256	14.22
3	Nitrite	5.63	10.292	43.573	25.4937	14.48
4	Bromide	6.70	1.840	7.924	24.9605	14.18
5	Nitrate	7.42	13.231	52.693	25.3027	14.37
6	Phosphate	9.67	3.961	10.900	25.0581	14.23
7	Sulfate	10.70	3.232	8.445	25.0770	14.25



Sample Analysis Report

Sample Name:	STD10	**Sample No.:**	10
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 12:26 PM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

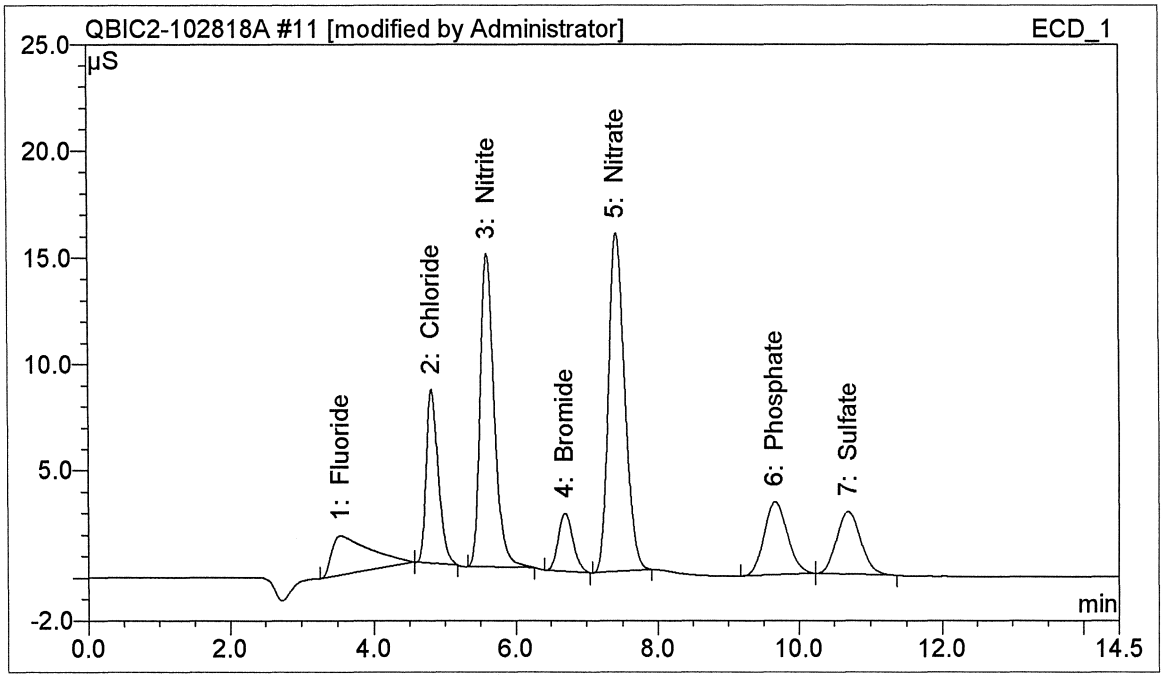
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.53	6.653	13.908	39.9421	14.29
2	Chloride	4.83	8.323	45.714	39.9983	14.31
3	Nitrite	5.64	16.779	68.424	39.7447	14.22
4	Bromide	6.71	3.089	13.445	40.0229	14.32
5	Nitrate	7.41	23.023	91.470	39.8574	14.26
6	Phosphate	9.66	6.839	19.154	39.9716	14.30
7	Sulfate	10.69	5.405	14.273	39.9576	14.30

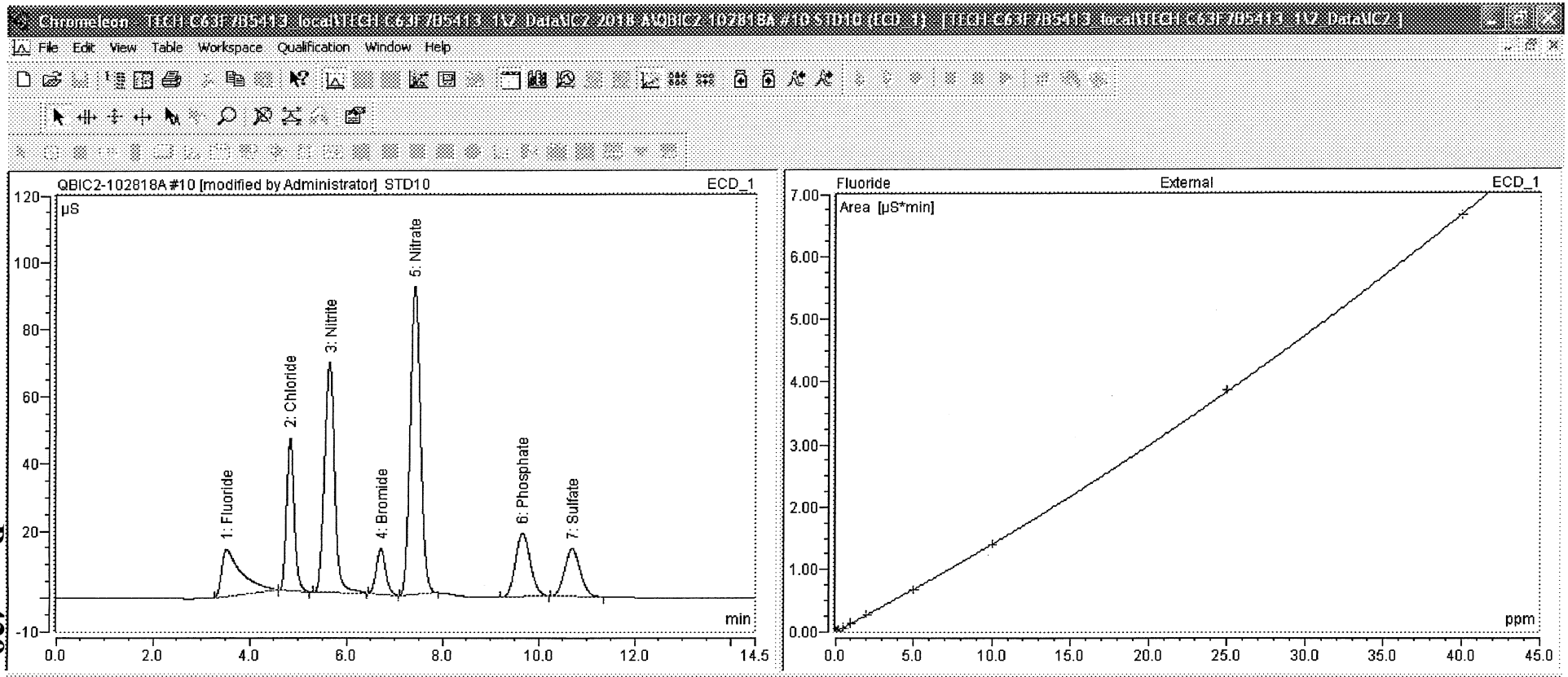


Sample Analysis Report

Sample Name:	ICV (Y18A025)	**Sample No.:**	11
Sequence Name:	QBIC2-102818A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	######### 11:53 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.54	1.107	1.821	7.9955	12.82
2	Chloride	4.81	1.584	8.154	8.9491	14.35
3	Nitrite	5.60	3.382	14.669	8.8533	14.20
4	Bromide	6.70	0.649	2.696	9.2610	14.85
5	Nitrate	7.42	4.170	15.843	9.0232	14.47
6	Phosphate	9.66	1.292	3.394	8.9712	14.39
7	Sulfate	10.69	1.137	2.907	9.2951	14.91





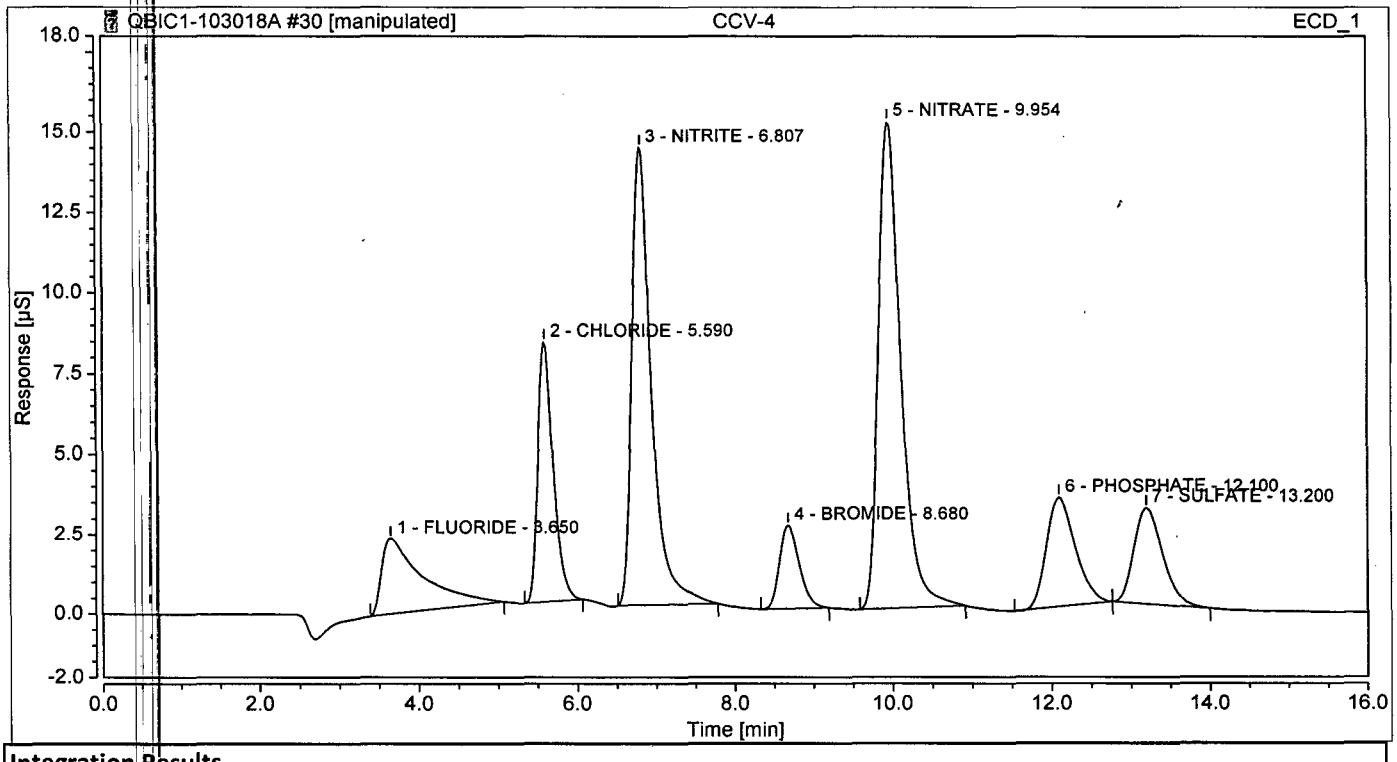
No.	Peak Name	Cal Type	#Points	Rel.Std.Dev. %	Corr.Coeff %	Offset	Slope	Curve
1	Fluoride	XQOff	10	19.2031	99.7351	-0.0082	0.1327	0.0009
2	Chloride	XQOff	10	5.3661	99.7769	0.0041	0.1675	0.0010
3	Nitrite	XQOff	10	11.1906	99.9044	-0.0018	0.3708	0.0013
4	Bromide	XQOff	10	6.1317	99.9161	0.0006	0.0679	0.0002
5	Nitrate	XQOff	10	7.4326	99.5840	0.0084	0.4272	0.0038
6	Phosphate	XQOff	10	4.4593	99.7546	0.0002	0.1362	0.0009
7	Sulfate	XQOff	10	7.3091	99.9013	0.0045	0.1179	0.0004
Average:			10	8.7275	99.7961	0.0011	0.2029	0.0012

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4**	*Run Time (min):*	**16.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/31/2018 5:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

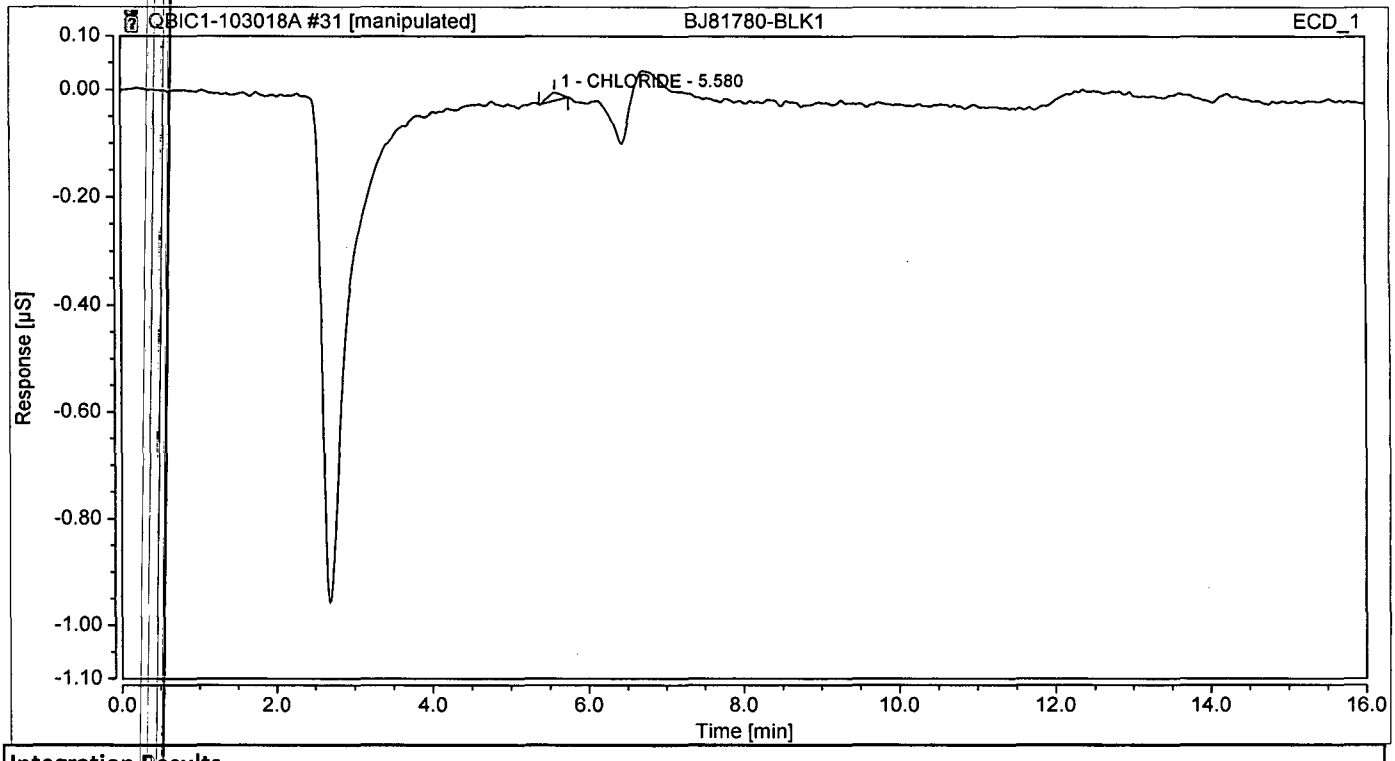
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	FLUORIDE	3.650	1.418	2.363	8.95	4.83	10.2886
2	CHLORIDE	5.590	1.821	8.089	11.50	16.54	10.3646
3	NITRITE	6.807	4.123	14.225	26.03	29.09	10.8114
4	BROMIDE	8.680	0.763	2.627	4.81	5.37	10.4729
5	NITRATE	9.954	4.992	15.148	31.52	30.97	10.7763
6	PHOSPHATE	12.100	1.448	3.425	9.14	7.00	10.6691
7	SULFATE	13.200	1.274	3.028	8.04	6.19	10.4905
Total:			**15.839**	**48.906**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BJ81780-BLK1**	*Run Time (min):*	**16.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/31/2018 5:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

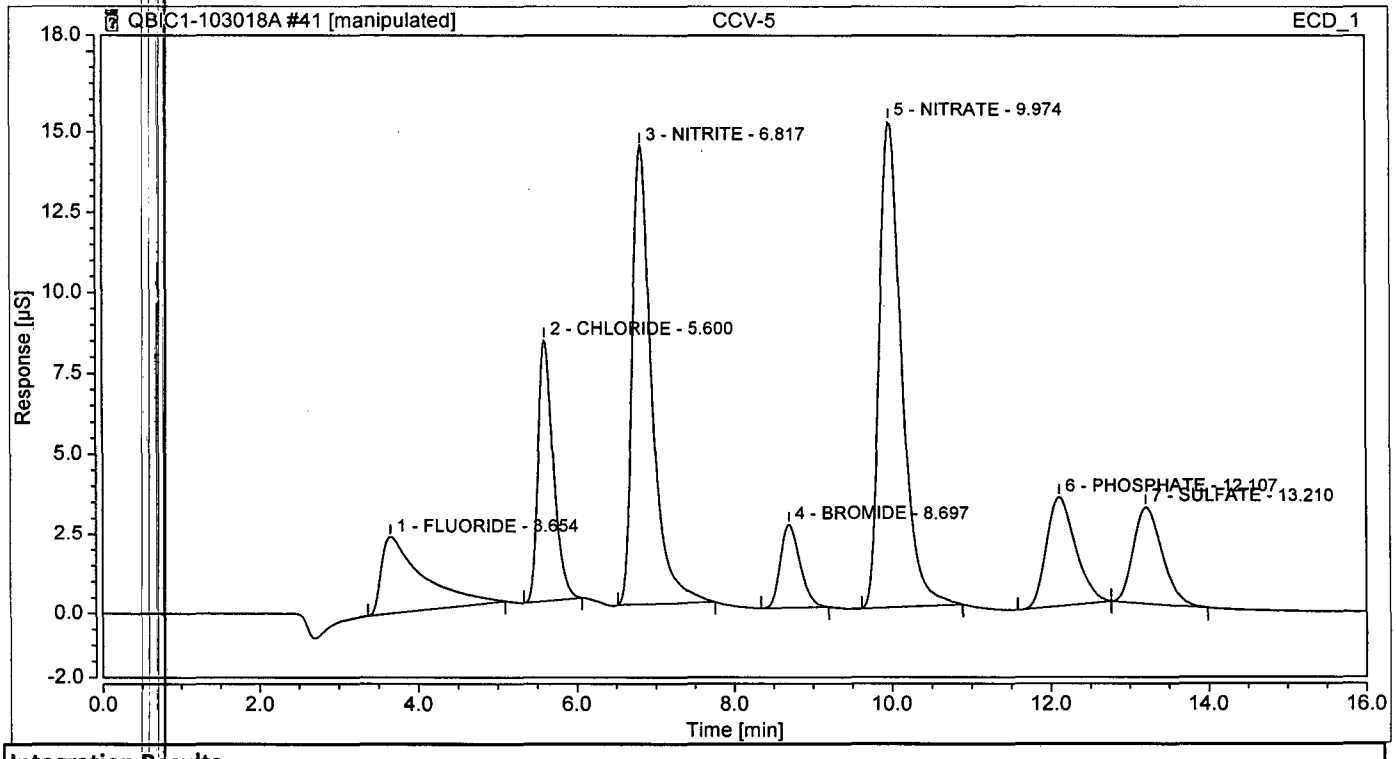
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.580	0.003	0.015	100.00	100.00	0.0087
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SULFATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.003**	**0.015**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5**	*Run Time (min):*	**16.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/31/2018 8:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

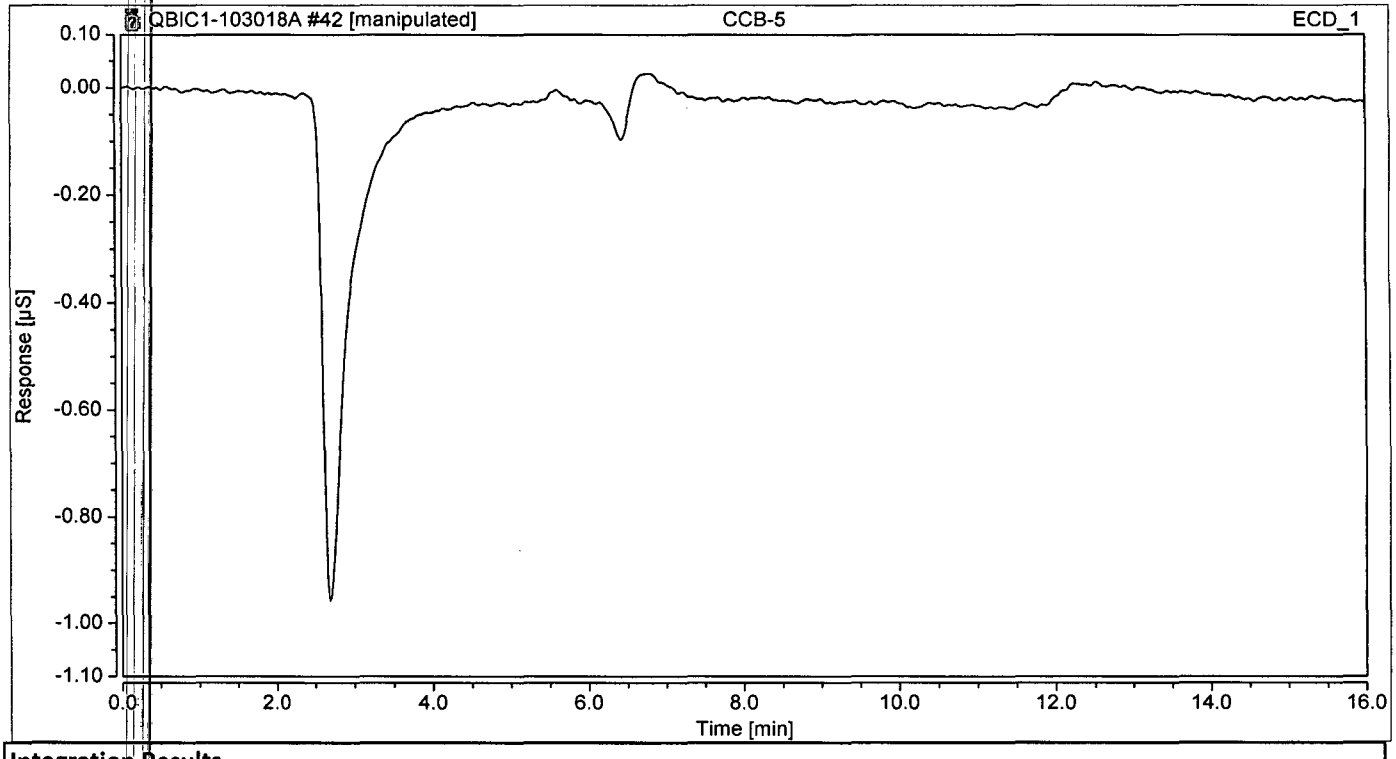
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	FLUORIDE	3.654	1.448	2.405	9.14	4.91	10.4972
2	CHLORIDE	5.600	1.822	8.119	11.50	16.56	10.3685
3	NITRITE	6.817	4.117	14.269	25.98	29.11	10.7964
4	BROMIDE	8.697	0.760	2.624	4.80	5.35	10.4417
5	NITRATE	9.974	4.964	15.135	31.32	30.88	10.7206
6	PHOSPHATE	12.107	1.457	3.423	9.19	6.98	10.7317
7	SULFATE	13.210	1.280	3.036	8.07	6.20	10.5371
Total:			**15.848**	**49.011**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5**	*Run Time (min):*	**16.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/31/2018 9:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

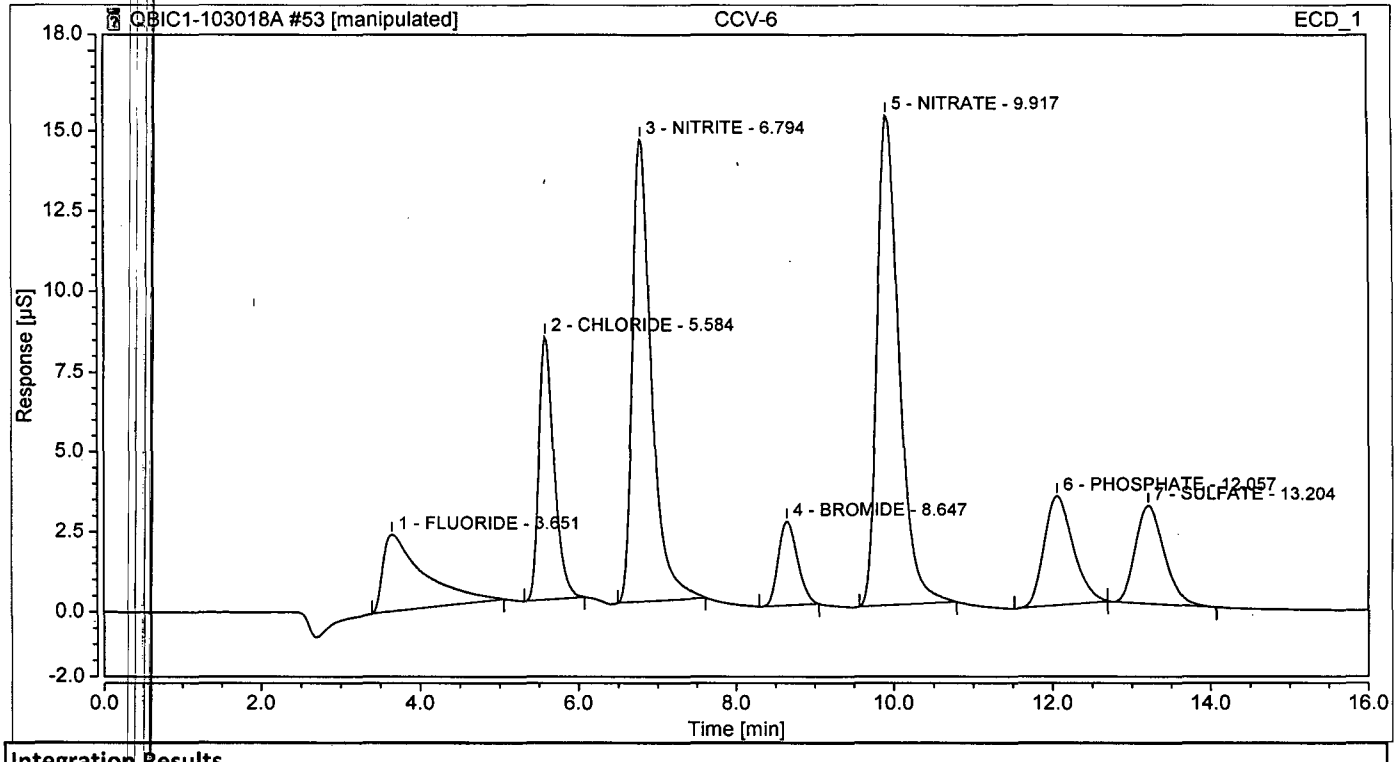
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	CHLORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SULFATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6**	*Run Time (min):*	**16.00**
Vial Number:	**2**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/31/2018 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

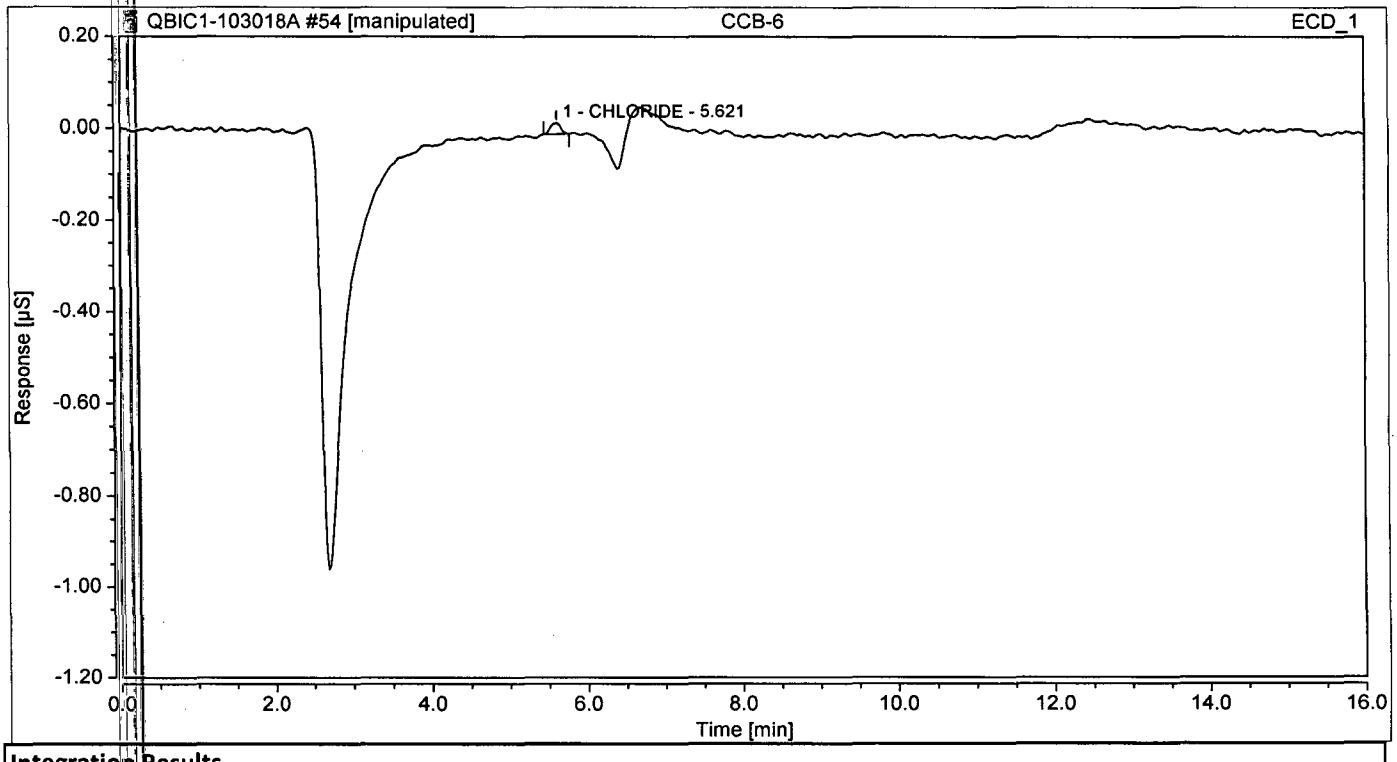
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	FLUORIDE	3.651	1.407	2.391	8.97	4.84	10.2083
2	CHLORIDE	5.584	1.830	8.210	11.67	16.61	10.4124
3	NITRITE	6.794	4.050	14.415	25.83	29.17	10.6226
4	BROMIDE	8.647	0.738	2.629	4.71	5.32	10.1470
5	NITRATE	9.917	4.932	15.298	31.46	30.95	10.6580
6	PHOSPHATE	12.057	1.436	3.416	9.16	6.91	10.5894
7	SULFATE	13.204	1.286	3.064	8.20	6.20	10.5850
Total:			**15.680**	**49.422**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6**	*Run Time (min):*	**16.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/31/2018 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



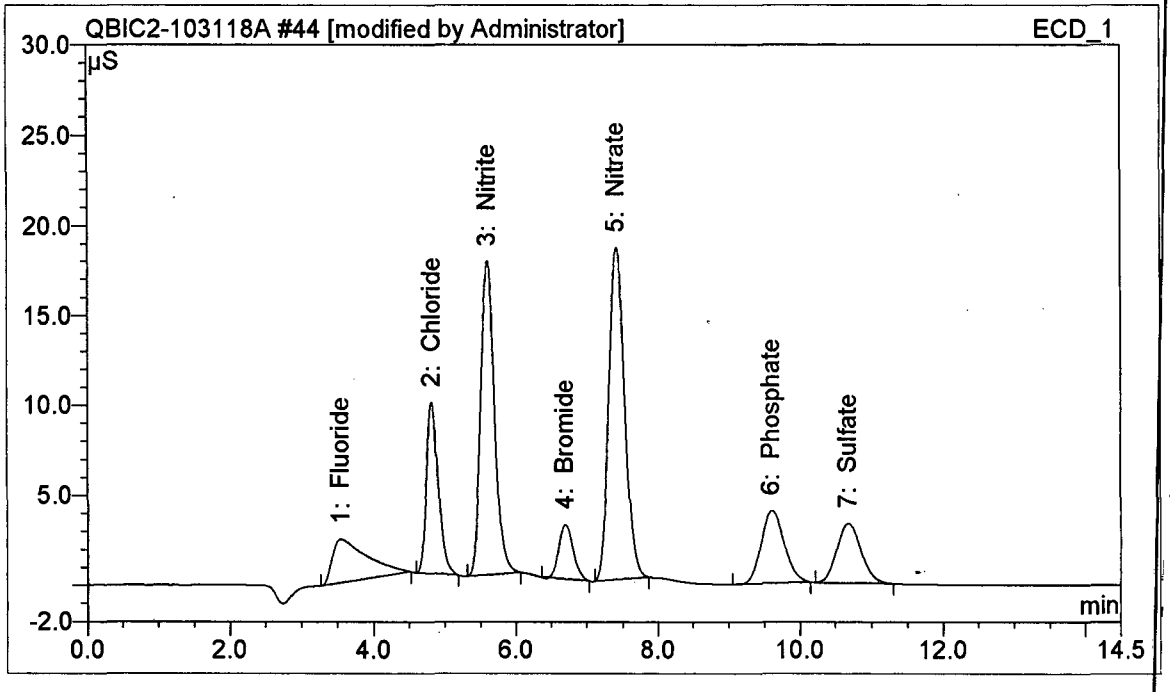
Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.621	0.004	0.024	100.00	100.00	0.0137
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SULFATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.004**	**0.024**	**100.00**	**100.00**	

Sample Analysis Report

Sample Name:	CCV-4	**Sample No.:**	44
Sequence Name:	QBIC2-103118A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	11/1/2018 7:23 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

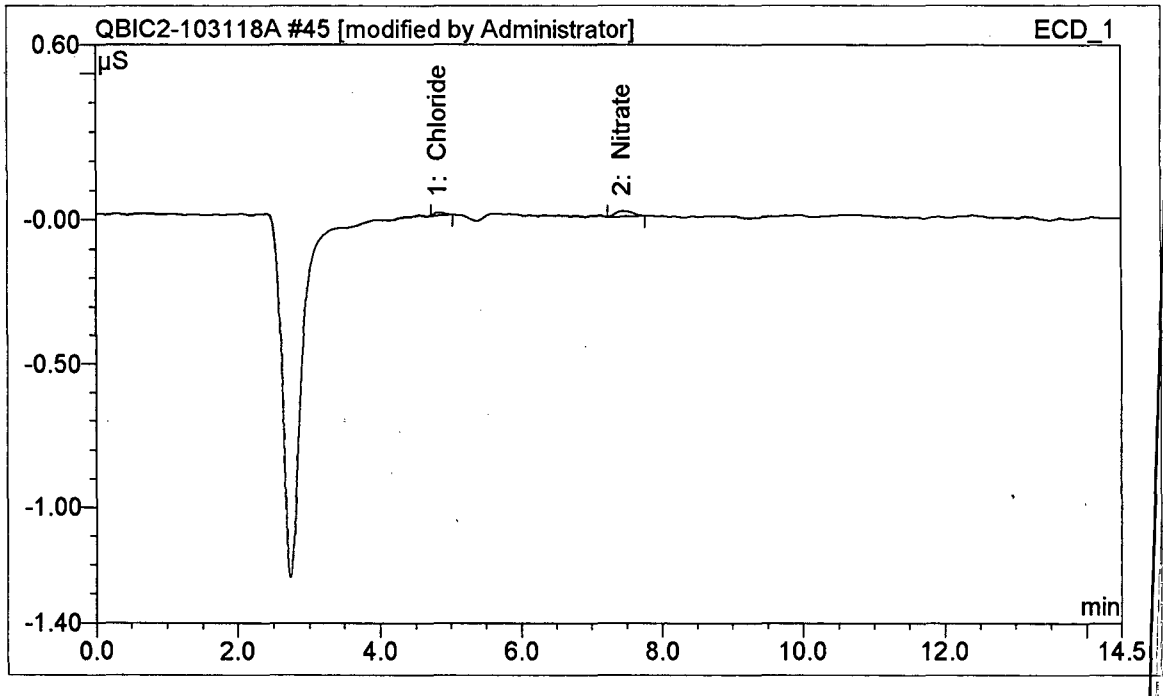
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.55	1.342	2.417	9.5885	13.47
2	Chloride	4.82	1.824	9.527	10.2290	14.37
3	Nitrite	5.60	3.902	17.418	10.1686	14.29
4	Bromide	6.70	0.711	3.026	10.1059	14.20
5	Nitrate	7.42	4.778	18.460	10.2403	14.39
6	Phosphate	9.61	1.509	4.034	10.3844	14.59
7	Sulfate	10.68	1.285	3.291	10.4635	14.70



Sample Analysis Report

Sample Name:	BK80076-BLK1	**Sample No.:**	45
Sequence Name:	QBIC2-103118A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	11/1/2018 7:43 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

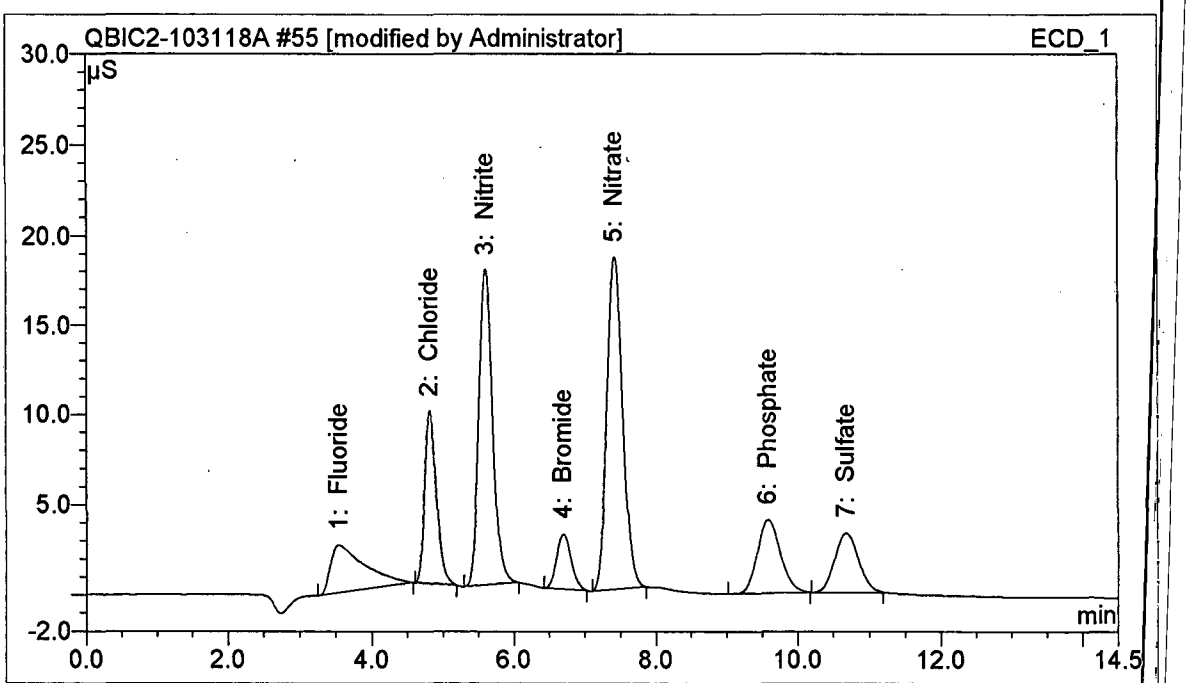
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Chloride	4.82	0.002	0.010	-0.0152	n.a.
2	Nitrate	7.44	0.005	0.019	-0.0077	n.a.



Sample Analysis Report

Sample Name:	CCV-5	**Sample No.:**	55
Sequence Name:	QBIC2-103118A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	11/1/2018 10:57 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

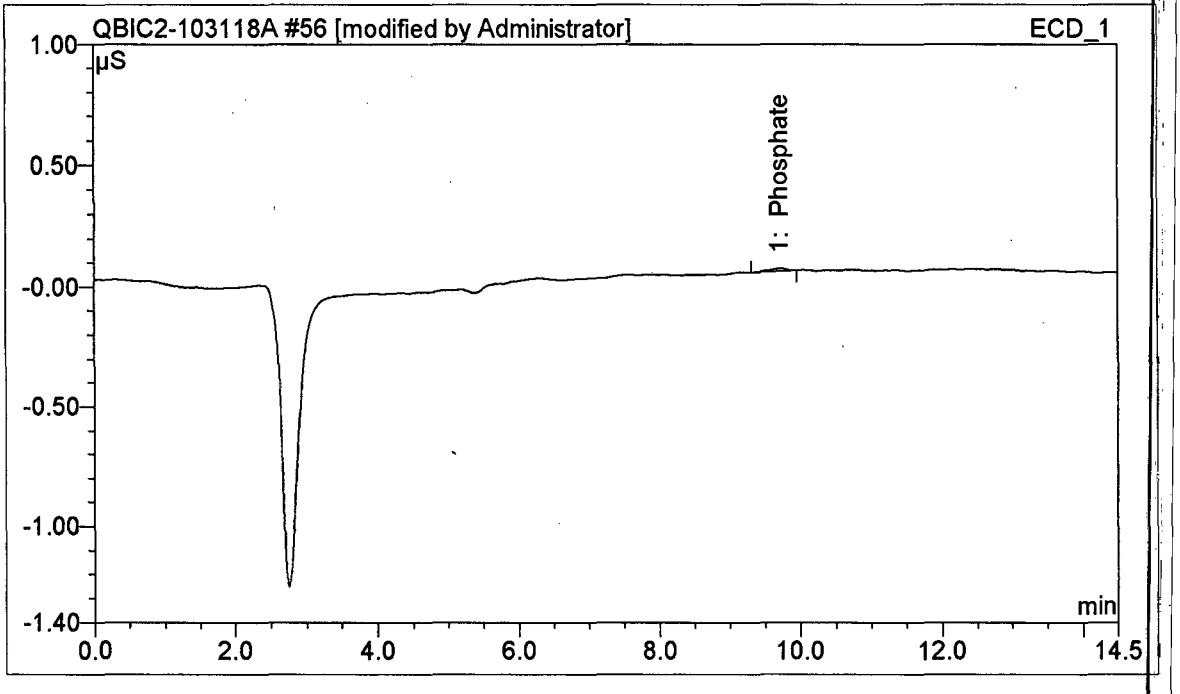
Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.54	1.455	2.628	10.3423	14.38
2	Chloride	4.82	1.819	9.568	10.2045	14.19
3	Nitrite	5.60	3.915	17.546	10.1999	14.18
4	Bromide	6.69	0.721	3.052	10.2489	14.25
5	Nitrate	7.42	4.773	18.516	10.2289	14.22
6	Phosphate	9.58	1.521	4.054	10.4618	14.55
7	Sulfate	10.67	1.255	3.269	10.2282	14.22



Sample Analysis Report

Sample Name:	CCB-5	**Sample No.:**	56
Sequence Name:	QBIC2-103118A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	11/1/2018 11:17 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Phosphate	9.71	0.003	0.012	0.0222	100.00



FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 300.0

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81780	Laboratory ID:	BJ81780-BS1
Preparation:	EPA 300	Initial/Final:	5.5 mL / 5.5 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC. #	QC LIMITS REC.
Sulfate	10.0	10.4	104	85 - 115

Column to be used to flag recovery and RPD values with an asterisk

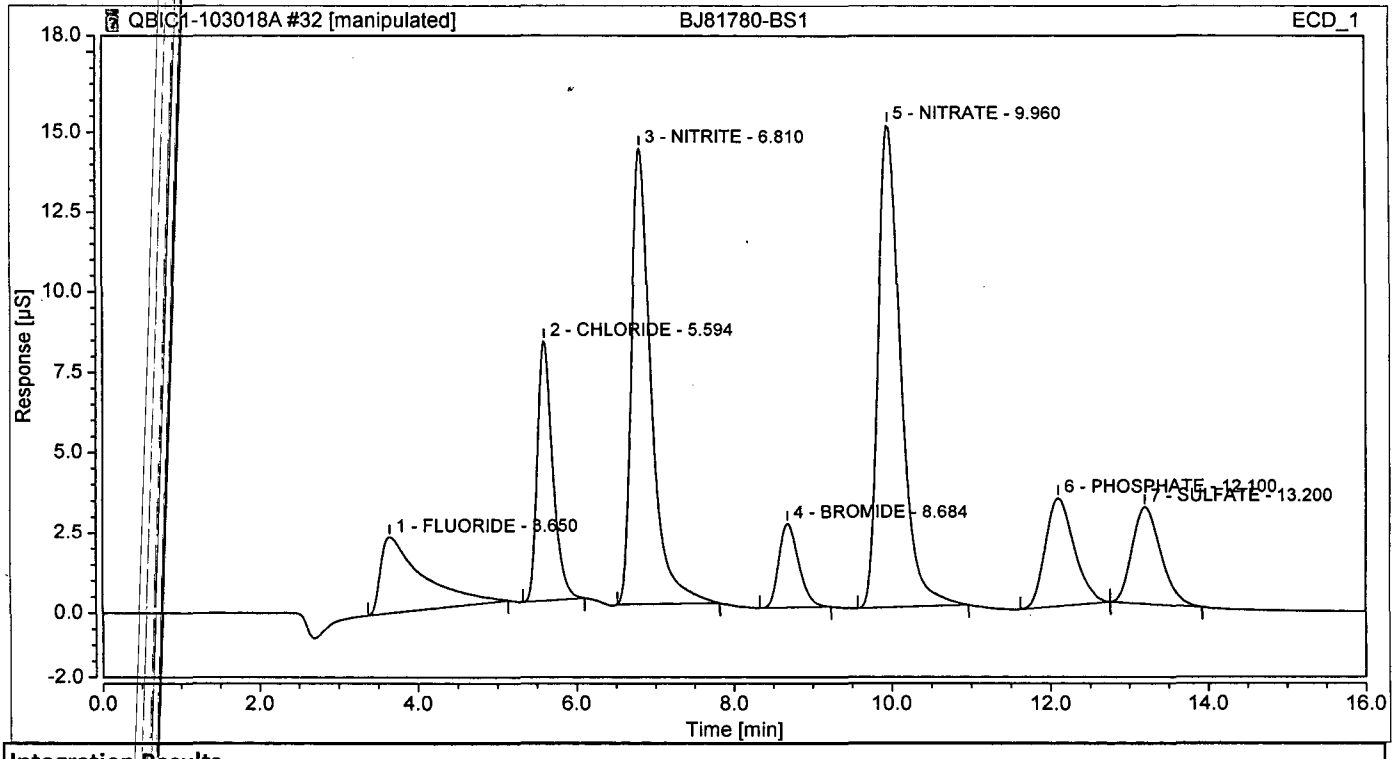
* Values outside of QC limits

Chromatogram and Results

Injection Details

Injection Name:	**BJ81780-BS1**	*Run Time (min):*	**16.00**
Vial Number:	**7**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/31/2018 6:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	FLUORIDE	3.650	1.447	2.362	9.14	4.85	10.4896
2	CHLORIDE	5.594	1.824	8.080	11.52	16.58	10.3767
3	NITRITE	6.810	4.128	14.227	26.08	29.19	10.8240
4	BROMIDE	8.684	0.764	2.619	4.83	5.37	10.4899
5	NITRATE	9.960	4.975	15.067	31.43	30.91	10.7421
6	PHOSPHATE	12.100	1.421	3.375	8.98	6.92	10.4876
7	SULFATE	13.200	1.268	3.016	8.01	6.19	10.4443
Total:			**15.827**	**48.746**	**100.00**	**100.00**	

FORM III

LCS / LCS DUPLICATE RECOVERY

EPA 300.0

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BK80076	Laboratory ID:	BK80076-BS1
Preparation:	EPA 300	Initial/Final:	5.5 mL / 5.5 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC. #	QC LIMITS REC.
Sulfate	10.0	10.0	100	85 - 115

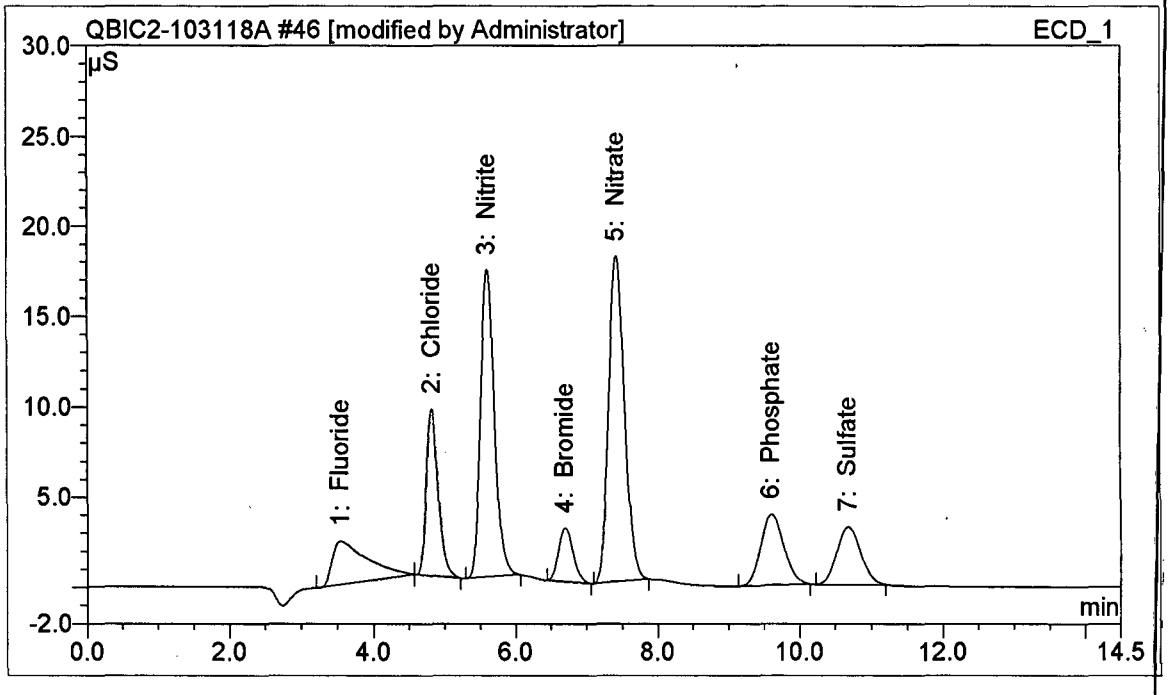
Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Sample Analysis Report

Sample Name:	BK80076-BS1	**Sample No.:**	46
Sequence Name:	QBIC2-103118A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	11/1/2018 8:02 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Fluoride	3.55	1.345	2.388	9.6072	13.79
2	Chloride	4.82	1.776	9.267	9.9762	14.32
3	Nitrite	5.60	3.807	16.997	9.9288	14.25
4	Bromide	6.70	0.706	2.972	10.0379	14.41
5	Nitrate	7.42	4.648	17.965	9.9807	14.32
6	Phosphate	9.60	1.468	3.927	10.1197	14.52
7	Sulfate	10.68	1.229	3.193	10.0247	14.39



MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 300.0

MW16_102518

Laboratory:	York Analytical Laboratories, Inc.	SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)	Project:	170264501
Matrix:	Water		
Batch:	BJ81780	Laboratory ID:	BJ81780-MS1
Preparation:	EPA 300	Initial/Final:	5.5 mL / 5.5 mL

Source Sample Name: MW16_102518

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC. #	QC LIMITS REC.
Sulfate	10.0	187	188	7.75 *	85 - 115

Column to be used to flag recovery and RPD values with an asterisk

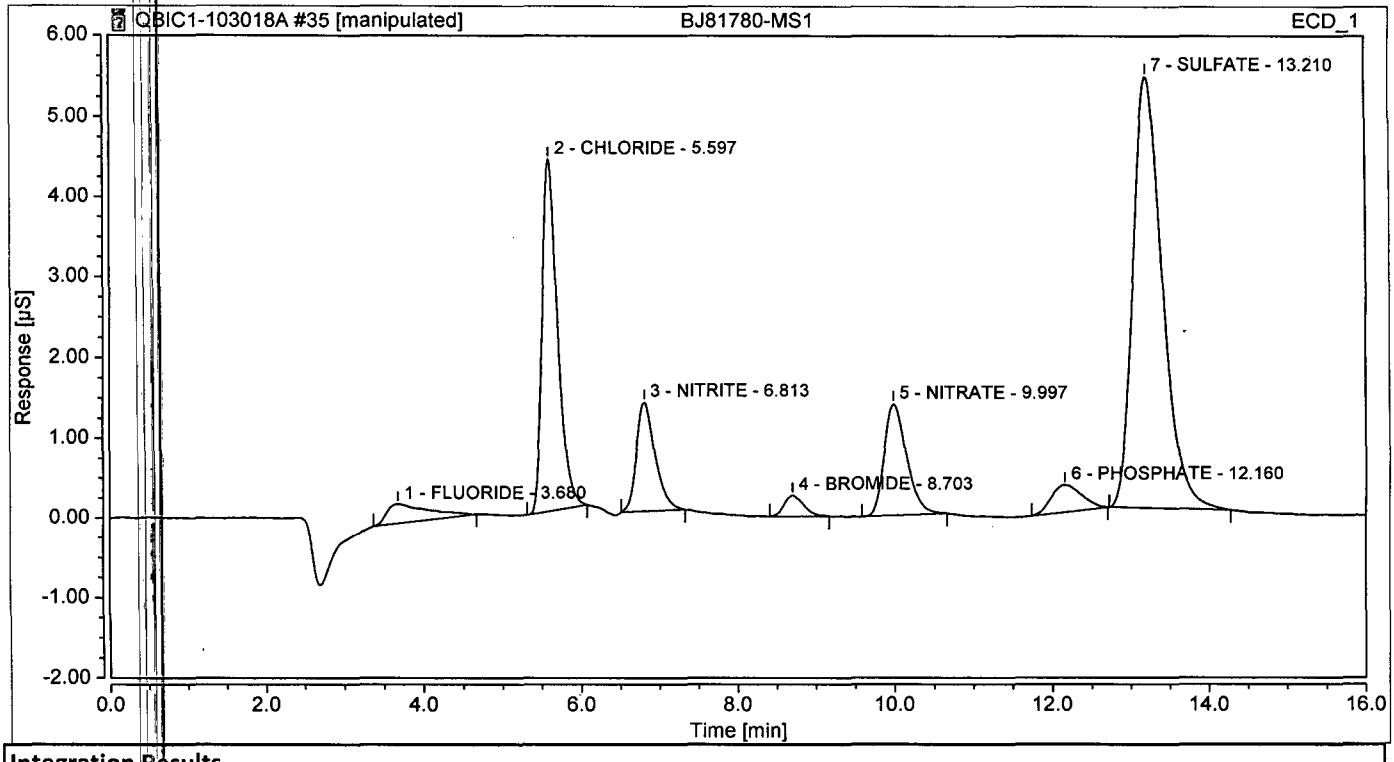
* Values outside of QC limits

Chromatogram and Results

Injection Details

Injection Name:	**BJ81780-MS1**	*Run Time (min):*	**16.00**
Vial Number:	**30**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 7:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	FLUORIDE	3.680	0.146	0.242	3.20	1.81	10.9649
2	CHLORIDE	5.597	1.001	4.383	22.01	32.81	58.4331
3	NITRITE	6.813	0.378	1.362	8.31	10.20	8.8070
4	BROMIDE	8.703	0.076	0.264	1.68	1.97	10.8829
5	NITRATE	9.997	0.462	1.392	10.14	10.42	10.8618
6	PHOSPHATE	12.160	0.154	0.339	3.37	2.54	12.3106
7	SULFATE	13.210	2.334	5.377	51.29	40.25	187.6039
Total:			**4.551**	**13.360**	**100.00**	**100.00**	

DUPLICATES

MW16_102518

EPA 300.0

Laboratory: York Analytical Laboratories, Inc.
SDG: 18J1263
Client: Langan Engineering & Environmental Services (NYC)
Project: 170264501
Matrix: Water
Laboratory ID: BJ81780-DUP1
Batch: BJ81780
Lab Source ID: 18J1263-01
Preparation: EPA 300
Initial/Final: 5.5 mL / 5.5 mL
Source Sample Name: MW16_102518
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q	METHOD
Sulfate	15	187		189		1.32		EPA 300.0

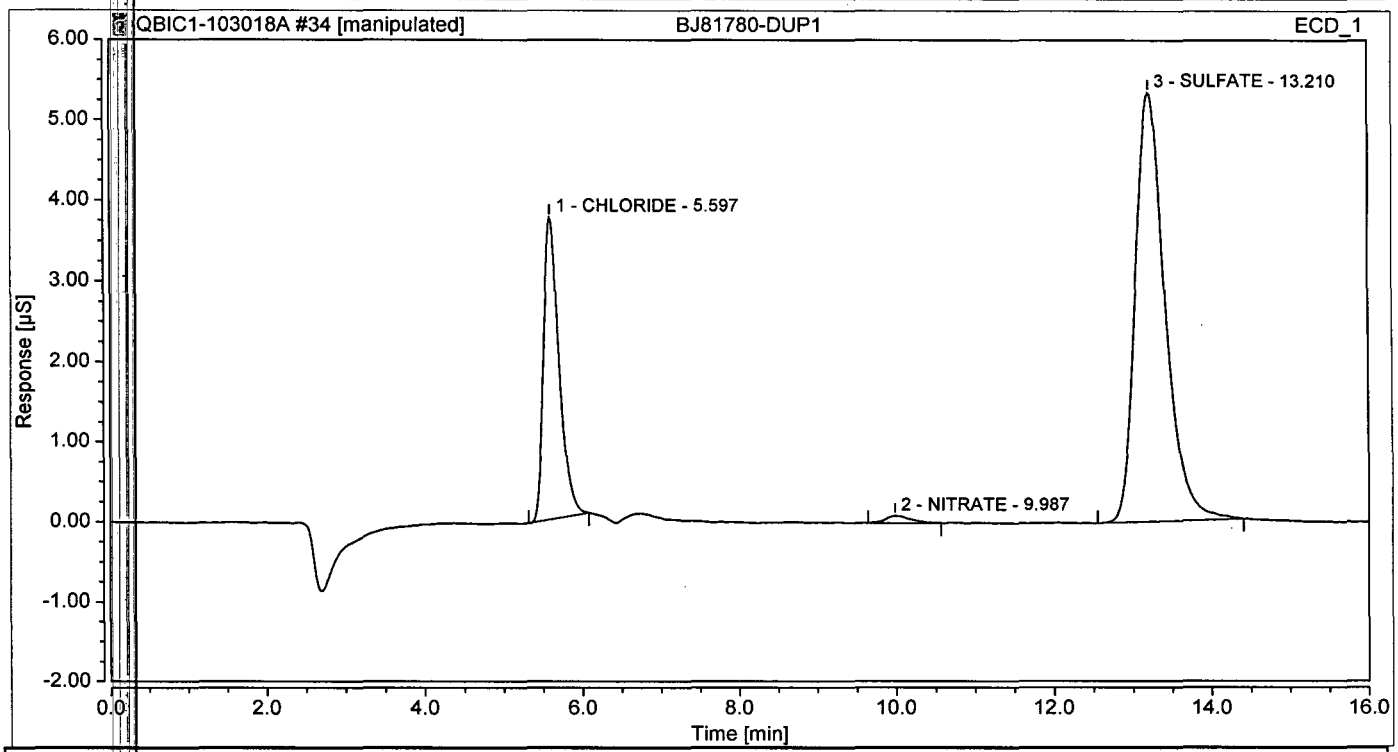
* Values outside of QC limits

Chromatogram and Results

Injection Details

Injection Name:	**BJ81780-DUP1**	*Run Time (min):*	**16.00**
Vial Number:	**29**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**10.0000**
Injection Date/Time:	**10/31/2018 6:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.597	0.860	3.758	26.47	40.87	50.4158
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	NITRATE	9.987	0.033	0.090	1.02	0.98	0.7728
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	SULFATE	13.210	2.357	5.347	72.51	58.15	189.3110
Total:			**3.250**	**9.195**	**100.00**	**100.00**	

FORM I

METHOD BLANK DATA SHEET

EPA 300.0

Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BJ81780-BLK1	File ID:	QBIC1-103018A-BJ81780-BLK1
Prepared:	10/31/18 05:54	Preparation:	EPA 300	Initial/Final:	5.5 mL / 5.5 mL
Analyzed:	10/31/18 05:54	Instrument:	ECD_1		
Batch:	BJ81780	Sequence:		Calibration:	

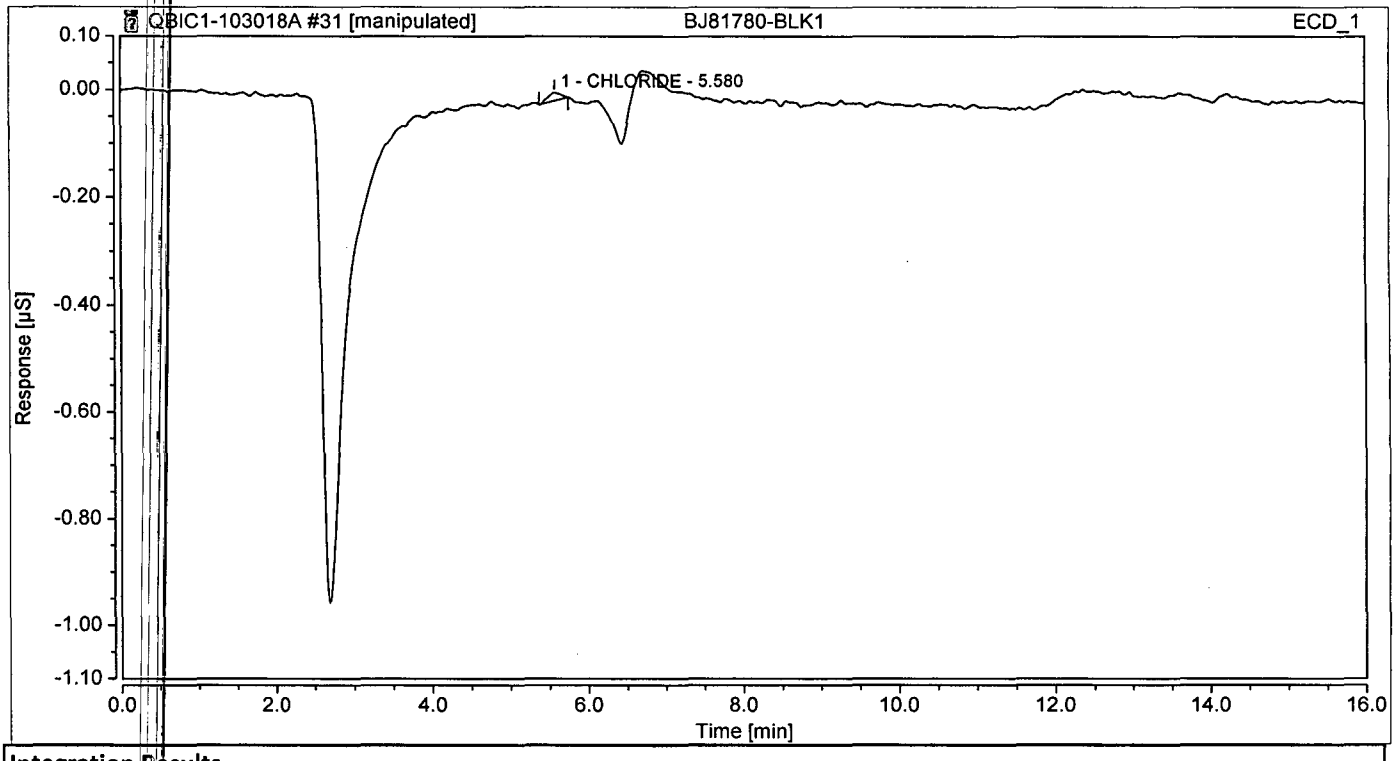
CAS NO.	COMPOUND	CONC. (mg/L)	Q
14808-79-8	Sulfate	1.00	U

Chromatogram and Results

Injection Details

Injection Name:	**BJ81780-BLK1**	*Run Time (min):*	**16.00**
Vial Number:	**5**	*Injection Volume:*	**25.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Anions061411_volume1666**	*Bandwidth:*	**n.a.**
Processing Method:	**AS9HC_Processing Method_061311_fixed**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/31/2018 5:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	5.580	0.003	0.015	100.00	100.00	0.0087
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	SULFATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.003**	**0.015**	**100.00**	**100.00**	

FORM I

METHOD BLANK DATA SHEET

EPA 300.0

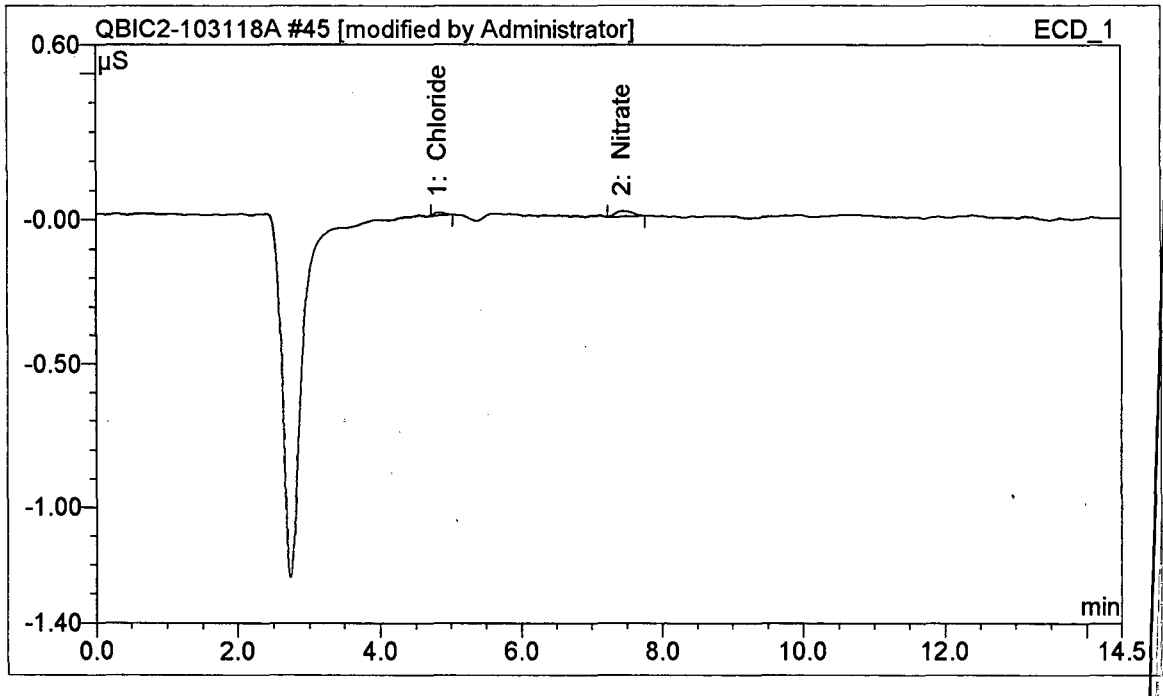
Laboratory:	York Analytical Laboratories, Inc.			SDG:	18J1263
Client:	Langan Engineering & Environmental Services (NYC)			Project:	170264501
Matrix:	Water	Laboratory ID:	BK80076-BLK1	File ID:	QBIC2-103118A.seq-45
Prepared:	11/01/18 07:43	Preparation:	EPA 300	Initial/Final:	5.5 mL / 5.5 mL
Analyzed:	11/01/18 07:43	Instrument:	IC		
Batch:	BK80076	Sequence:		Calibration:	

CAS NO.	COMPOUND	CONC. (mg/L)	Q
14808-79-8	Sulfate	1.00	U

Sample Analysis Report

Sample Name:	BK80076-BLK1	**Sample No.:**	45
Sequence Name:	QBIC2-103118A		
Program Method:	ICS 1500 Anions Program 042916	**Injection vol.:**	25.0
Quantitation Method:	Anions ICS1500 122016 TOTAL	**Dilution Factor:**	1.0000
Date Time Collected:	11/1/2018 7:43 AM	**Sample Wt.:**	1.0000
System Operator:	Administrator	**Sample Amt.:**	1.0000

Peak No.	Component Name	Retention Time	Area µS*min	Height µS	Amount ppm	Relative Amount %
1	Chloride	4.82	0.002	0.010	-0.0152	n.a.
2	Nitrate	7.44	0.005	0.019	-0.0077	n.a.



FORM IV **PREPARATION BATCH SUMMARY**

EPA 300.0

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Batch: BJ81780 Batch Matrix: Water Preparation: EPA 300

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW16_102518	18J1263-01	3018A-18J1263-01_Inte	10/31/18 06:30	
MW5_102518	18J1263-02	3018A-18J1263-02_Inte	10/31/18 08:16	
MW7_102518	18J1263-03	3018A-18J1263-03_Inte	10/31/18 08:34	
MW13_102518	18J1263-05	3018A-18J1263-05_Inte	10/31/18 09:46	
MW12_102518	18J1263-06	3018A-18J1263-06_Inte	10/31/18 10:04	
MW15_102518	18J1263-07	3018A-18J1263-07_Inte	10/31/18 10:22	
DUP01_102518	18J1263-08	3018A-18J1263-08_Inte	10/31/18 10:40	
FB01_102518	18J1263-10	3018A-18J1263-10_Inte	10/31/18 10:58	
Blank	BJ81780-BLK1	018A-BJ81780-BLK1_In	10/31/18 05:54	
LCS	BJ81780-BS1	018A-BJ81780-BS1_Int	10/31/18 06:11	
MW16_102518	BJ81780-DUP1	018A-BJ81780-DUP1_In	10/31/18 06:48	
MW16_102518	BJ81780-MS1	018A-BJ81780-MS1_Int	10/31/18 07:04	

FORM IV **PREPARATION BATCH SUMMARY**

EPA 300.0

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Batch: BK80076 Batch Matrix: Water Preparation: EPA 300

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW14_102518	18J1263-04	QBIC2-103118A.seq-52	11/01/18 09:59	
Blank	BK80076-BLK1	QBIC2-103118A.seq-45	11/01/18 07:43	
LCS	BK80076-BS1	QBIC2-103118A.seq-46	11/01/18 08:02	

BENCHSHEETS

SDG: 18J1263

CLASS: IC

METHOD: EPA 300.0

PREPARATION BENCH SHEET-AQUEOUS: BJ81780

Prepared: **10/31/2018 07:58**

York Analytical Laboratories, Inc.

Printed: 11/5/2018 10:41:54AM

Matrix: Water **Preparation EPA 300** **(No Surrogate)** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data			Decanted Y/N	Comments
									Initial	Acid	Basic		
18J1256-02 C	Chloride	5.5	5.5										Run Chloride samples in Duplicate
18J1263-01 E	Sulfate as SO4	5.5	5.5										
18J1263-01 E	Chloride	5.5	5.5										Added for BatchQC in: BJ81780
18J1263-01 E	Nitrite as N	5.5	5.5										Added for BatchQC in: BJ81780
18J1263-01 E	Nitrate as N	5.5	5.5										Added for BatchQC in: BJ81780
18J1263-01 E	Fluoride	5.5	5.5										Added for BatchQC in: BJ81780
18J1263-02 E	Sulfate as SO4	5.5	5.5										
18J1263-03 E	Sulfate as SO4	5.5	5.5										
18J1263-05 D	Sulfate as SO4	5.5	5.5										
18J1263-06 D	Sulfate as SO4	5.5	5.5										
18J1263-07 D	Sulfate as SO4	5.5	5.5										
18J1263-08 D	Sulfate as SO4	5.5	5.5										
18J1263-10 D	Sulfate as SO4	5.5	5.5										
18J1305-01 E	Chloride	5.5	5.5										
18J1391-03 E	Fluoride	5.5	5.5										
18J1391-03 E	Sulfate as SO4	5.5	5.5										
18J1391-03 E	Chloride	5.5	5.5										
18J1391-11 E	Fluoride	5.5	5.5										
18J1391-11 E	Sulfate as SO4	5.5	5.5										
18J1391-11 E	Chloride	5.5	5.5										
18J1391-19 E	Sulfate as SO4	5.5	5.5										
18J1391-19 E	Chloride	5.5	5.5										
18J1391-19 E	Fluoride	5.5	5.5										
18J1391-27 E	Sulfate as SO4	5.5	5.5										
18J1391-27 E	Fluoride	5.5	5.5										
18J1391-27 E	Chloride	5.5	5.5										
18J1391-35 E	Chloride	5.5	5.5										
18J1391-35 E	Fluoride	5.5	5.5										
18J1391-35 E	Sulfate as SO4	5.5	5.5										
18J1391-43 E	Sulfate as SO4	5.5	5.5										
18J1391-43 E	Chloride	5.5	5.5										
18J1391-43 E	Fluoride	5.5	5.5										
18J1452-02 A	Nitrite as N	5.5	5.5										
18J1452-02 A	Nitrate as N	5.5	5.5										

Preparation Performed by **TJM** **Date:** **10/31/2018 07:22**

PREPARATION BENCH SHEET-AQUEOUS: BJ81780

Prepared: **10/31/2018 07:40**

York Analytical Laboratories, Inc.

Printed: 11/5/2018 10:41:54AM

Matrix: Water **Preparation EPA 300** **(No Surrogate)** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data			Decanted Y/N	Comments
									Initial	Acid	Basic		
18J1452-03 A	Nitrite as N	5.5	5.5										
18J1452-03 A	Nitrate as N	5.5	5.5										
BJ81780-BLK1	QC	5.5	5.5										
BJ81780-BS1	QC	5.5	5.5	Y18H273	550								
BJ81780-DUP1	QC	5.5	5.5					18J1263-01					
BJ81780-MS1	QC	5.5	5.5	Y18H272	550			18J1263-01					

Reagents:

ID Number	Description	Lot Number	ID Number	Description	Lot Number

Preparation Performed by **TJM** **Date:** **10/31/2018 07:04**

BENCHSHEETS

SDG: 18J1263

CLASS: IC

METHOD: EPA 300.0

PREPARATION BENCH SHEET-AQUEOUS: BK80076

Prepared: **11/01/2018 09:59**

York Analytical Laboratories, Inc.

Printed: 11/5/2018 10:41:34AM

Matrix: Water **Preparation EPA 300** **(No Surrogate)** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data Initial	pH Data Acid	pH Data Basic	Decanted Y/N	Comments
18J1263-04 E	Sulfate as SO4	5.5	5.5										
18J1299-01 A	Chloride	5.5	5.5										
18J1299-02 A	Bromide	5.5	5.5										
18J1299-03 A	Nitrite as N	5.5	5.5										
18J1299-03 A	Nitrate as N	5.5	5.5										
18J1299-03 A	Chloride	5.5	5.5										
18J1339-01 A	Bromide	5.5	5.5										
18J1339-01 A	Chloride	5.5	5.5										
18J1339-02 A	Chloride	5.5	5.5										
18J1339-02 A	Nitrate as N	5.5	5.5										
18J1339-02 A	Nitrite as N	5.5	5.5										
18J1340-01 A	Chloride	5.5	5.5										
18J1340-02 A	Chloride	5.5	5.5										
18J1340-02 A	Bromide	5.5	5.5										
18J1340-03 A	Chloride	5.5	5.5										
18J1340-04 A	Chloride	5.5	5.5										
18J1340-05 A	Chloride	5.5	5.5										
18J1341-01 A	Chloride	5.5	5.5										
18J1341-02 A	Bromide	5.5	5.5										
18J1341-02 A	Chloride	5.5	5.5										
18J1341-03 A	Chloride	5.5	5.5										
18J1341-03 A	Nitrite as N	5.5	5.5										
18J1341-03 A	Nitrate as N	5.5	5.5										
18J1342-01 A	Chloride	5.5	5.5										
18J1342-02 A	Bromide	5.5	5.5										
18J1342-02 A	Chloride	5.5	5.5										
18J1342-03 A	Nitrate as N	5.5	5.5										
18J1342-03 A	Nitrite as N	5.5	5.5										
18J1474-01 A	Sulfate as SO4	5.5	5.5										Added for BatchQC in: BK80076
18J1474-01 A	Nitrite as N	5.5	5.5										Added for BatchQC in: BK80076
18J1474-01 A	Chloride	5.5	5.5										Added for BatchQC in: BK80076
18J1474-01 A	Bromide	5.5	5.5										Added for BatchQC in: BK80076
18J1474-01 A	Nitrate as N	5.5	5.5										
18J1474-02 A	Nitrite as N	5.5	5.5										

Preparation Performed by **TJM** **Date:** **11/01/2018 09:20**

PREPARATION BENCH SHEET-AQUEOUS: BK80076

Prepared: **11/01/2018 09:20**

York Analytical Laboratories, Inc.

Printed: 11/5/2018 10:41:34AM

Matrix: Water **Preparation EPA 300** **(No Surrogate)** **ul**

Lab Number	Analysis	Initial (mL)	Final (mL)	Spike 1 ID	ul Spike 1	Spike 2 ID	ul Spike 2	Source ID	pH Data Initial	pH Data Acid	pH Data Basic	Decanted Y/N	Comments
18J1474-02 A	Nitrate as N	5.5	5.5										
18J1474-03 A	Nitrate as N	5.5	5.5										
18J1474-03 A	Nitrite as N	5.5	5.5										
BK80076-BLK1	QC	5.5	5.5										
BK80076-BS1	QC	5.5	5.5	Y18H273	550								
BK80076-MS1	QC	5.5	5.5	Y18H272	550			18J1474-01					

THIS BATCH HAS NO DUPLICATE BECAUSE THE POSITION FOR DUP AND MS WERE THE SAME, RESLUTING IN AN MSD INSTEAD OF DUP. THE ISSUE HAS BEEN CORRECTED.

Reagents:

ID Number	Description	Lot Number	ID Number	Description	Lot Number

Preparation Performed by **TJM** **Date:** **11/01/2018 09:01**

Calibration Curve Data

HOLDING TIME SUMMARY

EPA 300.0

Laboratory: York Analytical Laboratories, Inc. SDG: 18J1263

Client: Langan Engineering & Environmental Services (NYC) Project: 170264501

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
MW16_102518	10/25/18 09:20	10/25/18 20:09	10/31/18 06:30	5.88	28.00	10/31/18 06:30	5.88	28.00	
MW5_102518	10/25/18 15:55	10/25/18 20:09	10/31/18 08:16	5.68	28.00	10/31/18 08:16	5.68	28.00	
MW7_102518	10/25/18 16:05	10/25/18 20:09	10/31/18 08:34	5.69	28.00	10/31/18 08:34	5.69	28.00	
MW14_102518	10/25/18 14:45	10/25/18 20:09	11/01/18 09:59	6.80	28.00	11/01/18 09:59	6.80	28.00	
MW13_102518	10/25/18 15:10	10/25/18 20:09	10/31/18 09:46	5.78	28.00	10/31/18 09:46	5.78	28.00	
MW12_102518	10/25/18 15:20	10/25/18 20:09	10/31/18 10:04	5.78	28.00	10/31/18 10:04	5.78	28.00	
MW15_102518	10/25/18 15:35	10/25/18 20:09	10/31/18 10:22	5.78	28.00	10/31/18 10:22	5.78	28.00	
DUP01_102518	10/25/18 00:00	10/25/18 20:09	10/31/18 10:40	6.44	28.00	10/31/18 10:40	6.44	28.00	
FB01_102518	10/25/18 07:15	10/25/18 20:09	10/31/18 10:58	6.15	28.00	10/31/18 10:58	6.15	28.00	

METHOD DETECTION AND REPORTING LIMITS

EPA 300.0

Laboratory: York Analytical Laboratories, Inc. **SDG:** 18J1263

Client: Langan Engineering & Environmental Services (NYC) **Project:** 170264501

Matrix: Water **Instrument:**

Analyte	LOD	LOQ	Units
Sulfate	0.0860	1.00	mg/L

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2019
Issued April 01, 2018
Revised October 19, 2018

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ROBERT Q. BRADLEY
YORK ANALYTICAL LABORATORIES INC
120 RESEARCH DRIVE
STRATFORD, CT 06615

NY Lab Id No: 10854

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260C
	EPA 624.1
Acrylonitrile	EPA 8260C
	EPA 624.1
Methyl methacrylate	EPA 8260C
Amines	
1,2-Diphenylhydrazine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Aniline	EPA 625.1
	EPA 8270D
Carbazole	EPA 625.1
	EPA 8270D
Diphenylamine	EPA 8270D
Pyridine	EPA 625.1
	EPA 8270D
Benzidines	
3,3'-Dichlorobenzidine	EPA 625.1
	EPA 8270D
Benzidine	EPA 625.1
	EPA 8270D

Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081B
	EPA 608.3
4,4'-DDE	EPA 8081B
	EPA 608.3
4,4'-DDT	EPA 8081B
	EPA 608.3
Aldrin	EPA 8081B
	EPA 608.3
alpha-BHC	EPA 8081B
	EPA 608.3
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
	EPA 608.3
Chlordane Total	EPA 8081B
	EPA 608.3
delta-BHC	EPA 8081B
	EPA 608.3
Dieldrin	EPA 8081B
	EPA 608.3
Endosulfan I	EPA 8081B
	EPA 608.3
Endosulfan II	EPA 8081B
	EPA 608.3
Endosulfan sulfate	EPA 8081B
	EPA 608.3
Endrin	EPA 8081B

Serial No.: 58737

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Chlorinated Hydrocarbon Pesticides	
Endrin	EPA 608.3
Endrin aldehyde	EPA 8081B
	EPA 608.3
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
	EPA 608.3
Heptachlor epoxide	EPA 8081B
	EPA 608.3
Lindane	EPA 8081B
	EPA 608.3
Methoxychlor	EPA 8081B
	EPA 608.3
Mirex	EPA 8081B
Toxaphene	EPA 8081B
	EPA 608.3
Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625.1
	EPA 8270D
2-Chloronaphthalene	EPA 625.1
	EPA 8270D
Hexachlorobenzene	EPA 625.1
	EPA 8270D

Chlorinated Hydrocarbons	
Hexachlorobutadiene	EPA 625.1
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625.1
	EPA 8270D
Hexachloroethane	EPA 625.1
	EPA 8270D
Pentachlorobenzene	EPA 8270D
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
	SM 6640B-2006
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Demand	
Biochemical Oxygen Demand	SM 5210B-2011
Carbonaceous BOD	SM 5210B-2011
Chemical Oxygen Demand	SM 5220D-2011
Fuel Oxygenates	
Di-isopropyl ether	EPA 8260C
Ethanol	EPA 8260C
Methyl tert-butyl ether	EPA 8260C
tert-amyl alcohol	EPA 8260C
tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C

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All approved analytes are listed below:

Fuel Oxygenates	
tert-butyl ethyl ether (ETBE)	EPA 8260C
Haloethers	
2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270D
4-Bromophenylphenyl ether	EPA 625.1
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 625.1
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625.1
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 625.1
	EPA 8270D
Low Level Halocarbons	
1,2,3-Trichloropropane, Low Level	EPA 8011
1,2-Dibromo-3-chloropropane, Low Level	EPA 8011
1,2-Dibromoethane, Low Level	EPA 8011
Low Level Polynuclear Aromatics	
Acenaphthene Low Level	EPA 8270D
Acenaphthylene Low Level	EPA 8270D
Anthracene Low Level	EPA 8270D
Benzo(a)anthracene Low Level	EPA 8270D
Benzo(a)pyrene Low Level	EPA 8270D
Benzo(b)fluoranthene Low Level	EPA 8270D
Benzo(g,h,i)perylene Low Level	EPA 8270D

Low Level Polynuclear Aromatics	
Benzo(k)fluoranthene Low Level	EPA 8270D
Chrysene Low Level	EPA 8270D
Dibenzo(a,h)anthracene Low Level	EPA 8270D
Fluoranthene Low Level	EPA 8270D
Fluorene Low Level	EPA 8270D
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D
Naphthalene Low Level	EPA 8270D
Phenanthrene Low Level	EPA 8270D
Pyrene Low Level	EPA 8270D
Metals I	
Barium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Cadmium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Calcium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D

Serial No.: 58737

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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NY Lab Id No: 10854

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Metals I		**Metals I**	
Chromium, Total	EPA 200.7, Rev. 4.4 (1994)	Manganese, Total	EPA 6010D
	EPA 6010C		EPA 6020A
	EPA 6010D		EPA 6020B
	EPA 6020A		EPA 200.8, Rev. 5.4 (1994)
	EPA 6020B	Nickel, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 200.8, Rev. 5.4 (1994)		EPA 6010C
Copper, Total	EPA 200.7, Rev. 4.4 (1994)		EPA 6010D
	EPA 6010C		EPA 6020A
	EPA 6010D		EPA 6020B
	EPA 6020A		EPA 200.8, Rev. 5.4 (1994)
	EPA 6020B	Potassium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 200.8, Rev. 5.4 (1994)		EPA 6010C
Iron, Total	EPA 200.7, Rev. 4.4 (1994)		EPA 6010D
	EPA 6010C	Silver, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010D		EPA 6010C
Lead, Total	EPA 200.7, Rev. 4.4 (1994)		EPA 6010D
	EPA 6010C		EPA 6020A
	EPA 6010D		EPA 6020B
	EPA 6020A		EPA 200.8, Rev. 5.4 (1994)
	EPA 6020B	Sodium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 200.8, Rev. 5.4 (1994)		EPA 6010C
Magnesium, Total	EPA 200.7, Rev. 4.4 (1994)		EPA 6010D
	EPA 6010C	**Metals II**	
	EPA 6010D	Aluminum, Total	EPA 200.7, Rev. 4.4 (1994)
Manganese, Total	EPA 200.7, Rev. 4.4 (1994)		EPA 6010C
	EPA 6010C		

Serial No.: 58737

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Metals II

Aluminum, Total	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Antimony, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Arsenic, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Beryllium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Chromium VI	EPA 7196A
	SM 3500-Cr B-2011
Mercury, Total	EPA 245.1, Rev. 3.0 (1994)
	EPA 245.2 (Issued 1974, Rev. 1983)

Metals II

Mercury, Total	EPA 7470A
	EPA 7473
Selenium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Vanadium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Zinc, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)

Metals III

Cobalt, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A

Serial No.: 58737

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Metals III	
Cobalt, Total	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Thallium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Tin, Total	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Titanium, Total	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Mineral	
Alkalinity	SM 2320B-2011
Calcium Hardness	EPA 200.7, Rev. 4.4 (1994)
Chloride	EPA 300.0, Rev. 2.1 (1993)
Fluoride, Total	EPA 300.0, Rev. 2.1 (1993)
Hardness, Total	EPA 200.7, Rev. 4.4 (1994)
Sulfate (as SO4)	EPA 300.0, Rev. 2.1 (1993)
Miscellaneous	
Bromide	EPA 300.0, Rev. 2.1 (1993)
Color	SM 2120B-2011
Cyanide, Total	SM 4500-CN E-2011
Oil and Grease Total Recoverable (HEM)	EPA 1664A
Organic Carbon, Total	SM 5310C-2011

Miscellaneous	
Phenols	EPA 420.1 (Rev. 1978)
Specific Conductance	EPA 120.1 (Rev. 1982)
Sulfide (as S)	SM 4500-S2- F-2011
Surfactant (MBAS)	SM 5540C-2011
Turbidity	EPA 180.1, Rev. 2.0 (1993)
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 625.1
	EPA 8270D
2,6-Dinitrotoluene	EPA 625.1
	EPA 8270D
Isophorone	EPA 625.1
	EPA 8270D
Nitrobenzene	EPA 625.1
	EPA 8270D
Nitrosoamines	
N-Nitrosodimethylamine	EPA 625.1
	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625.1
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625.1
	EPA 8270D
Nutrient	
Ammonia (as N)	SM 4500-NH3 D-2011 or E-2011
Kjeldahl Nitrogen, Total	SM 4500-N Org D-2011

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2019
Issued April 01, 2018
Revised October 19, 2018

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ROBERT Q. BRADLEY
YORK ANALYTICAL LABORATORIES INC
120 RESEARCH DRIVE
STRATFORD, CT 06615

NY Lab Id No: 10854

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Nutrient	
Kjeldahl Nitrogen, Total	SM 4500-NH3 D-2011 or E-2011
Nitrate (as N)	EPA 300.0, Rev. 2.1 (1993)
Nitrate-Nitrite (as N)	EPA 300.0, Rev. 2.1 (1993)
Nitrite (as N)	EPA 300.0, Rev. 2.1 (1993)
Orthophosphate (as P)	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-P E-2011
Phosphorus, Total	SM 4500-P E-2011
Organophosphate Pesticides	
Atrazine	EPA 8270D
Parathion ethyl	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015D
Gasoline Range Organics	EPA 8015D
Phthalate Esters	
Benzyl butyl phthalate	EPA 625.1
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 8270D
Diethyl phthalate	EPA 625.1
	EPA 8270D
Dimethyl phthalate	EPA 625.1
	EPA 8270D
Di-n-butyl phthalate	EPA 625.1
	EPA 8270D
Phthalate Esters	
Di-n-octyl phthalate	EPA 625.1
	EPA 8270D
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
	EPA 608.3
Aroclor 1221 (PCB-1221)	EPA 8082A
	EPA 608.3
Aroclor 1232 (PCB-1232)	EPA 8082A
	EPA 608.3
Aroclor 1242 (PCB-1242)	EPA 8082A
	EPA 608.3
Aroclor 1248 (PCB-1248)	EPA 8082A
	EPA 608.3
Aroclor 1254 (PCB-1254)	EPA 8082A
	EPA 608.3
Aroclor 1260 (PCB-1260)	EPA 8082A
	EPA 608.3
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Polynuclear Aromatics	
Acenaphthene	EPA 625.1
	EPA 8270D
Acenaphthylene	EPA 625.1
	EPA 8270D
Anthracene	EPA 625.1

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Polynuclear Aromatics	
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 625.1
	EPA 8270D
Benzo(a)pyrene	EPA 625.1
	EPA 8270D
Benzo(b)fluoranthene	EPA 625.1
	EPA 8270D
Benzo(g,h,i)perylene	EPA 625.1
	EPA 8270D
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270D
Chrysene	EPA 625.1
	EPA 8270D
Dibenzo(a,h)anthracene	EPA 625.1
	EPA 8270D
Fluoranthene	EPA 625.1
	EPA 8270D
Fluorene	EPA 625.1
	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 625.1
	EPA 8270D
Naphthalene	EPA 625.1
	EPA 8270D
Phenanthrene	EPA 625.1
	EPA 8270D
Pyrene	EPA 625.1
Polynuclear Aromatics	
Pyrene	EPA 8270D
Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 625.1
	EPA 8270D
2,4,6-Trichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dimethylphenol	EPA 625.1
	EPA 8270D
2,4-Dinitrophenol	EPA 625.1
	EPA 8270D
2-Chlorophenol	EPA 625.1
	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625.1
	EPA 8270D
2-Methylphenol	EPA 625.1
	EPA 8270D
2-Nitrophenol	EPA 625.1
	EPA 8270D
4-Chloro-3-methylphenol	EPA 625.1
	EPA 8270D
4-Methylphenol	EPA 625.1
	EPA 8270D

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Priority Pollutant Phenols	
4-Nitrophenol	EPA 625.1
	EPA 8270D
Cresols, Total	EPA 8270D
Pentachlorophenol	EPA 625.1
	EPA 8270D
Phenol	EPA 625.1
	EPA 8270D
Residue	
Settleable Solids	SM 2540 F-2011
Solids, Total	SM 2540 B-2011
Solids, Total Dissolved	SM 2540 C-2011
Solids, Total Suspended	SM 2540 D-2011
Semi-Volatile Organics	
1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
Acetophenone	EPA 8270D
alpha-Terpineol	EPA 625.1
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D

Volatile Aromatics	
1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,4-Dichlorobenzene	EPA 8260C
	EPA 624.1
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 624.1
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
	EPA 624.1
Ethyl benzene	EPA 8260C
	EPA 624.1
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
	EPA 624.1
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
	EPA 624.1

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Volatile Aromatics

p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
	EPA 624.1
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 624.1
Total Xylenes	EPA 8260C
	EPA 624.1

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
	EPA 624.1
1,1,2,2-Tetrachloroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethene	EPA 8260C
	EPA 624.1
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C

Volatile Halocarbons

1,2-Dibromoethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
	EPA 624.1
1,2-Dichloropropane	EPA 8260C
	EPA 624.1
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
	EPA 624.1
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
	EPA 624.1
Bromoform	EPA 8260C
	EPA 624.1
Bromomethane	EPA 8260C
	EPA 624.1
Carbon tetrachloride	EPA 8260C
	EPA 624.1
Chloroethane	EPA 8260C
	EPA 624.1
Chloroform	EPA 8260C
	EPA 624.1
Chloromethane	EPA 8260C
	EPA 624.1
cis-1,2-Dichloroethene	EPA 8260C
	EPA 624.1

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Volatile Halocarbons

cis-1,3-Dichloropropene	EPA 8260C
	EPA 624.1
Dibromochloromethane	EPA 8260C
	EPA 624.1
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
	EPA 624.1
Hexachlorobutadiene, Volatile	EPA 8260C
Methylene chloride	EPA 8260C
	EPA 624.1
Tetrachloroethene	EPA 8260C
	EPA 624.1
trans-1,2-Dichloroethene	EPA 8260C
	EPA 624.1
trans-1,3-Dichloropropene	EPA 8260C
	EPA 624.1
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
	EPA 624.1
Trichlorofluoromethane	EPA 8260C
	EPA 624.1
Vinyl chloride	EPA 8260C
	EPA 624.1

Volatiles Organics

1,4-Dioxane	EPA 8260C

Volatiles Organics

1,4-Dioxane	EPA 8270D SIM
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
Vinyl acetate	EPA 8260C

Sample Preparation Methods

SM 4500-P B(5)-2011
EPA 5030C
SM 4500-CN B-2011 and C-201
EPA 3015A
EPA 3010A
EPA 3510C
SM 4500-N Org B-2011 or C-20

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